

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	10/532027	US-PGPUB; USPAT	AND	ON	2007/10/03 14:44
L2	1	"2001160488"	DERWENT	AND	ON	2007/10/03 14:46
S4	14675	428/690.ccls. or 428/917.ccls. or 313/502-509.ccls. or 427/58.ccls. or 427/66.ccls. or 257/E51.001-E51. 052.ccls. or 252/301.16-301.35.ccls.	US-PGPUB; USPAT	AND	ON	2007/07/10 13:44
S5	7432	S4 and electroluminescen\$2	US-PGPUB; USPAT	AND	ON	2007/08/07 11:47
S10	4071	428/690.ccls. or 428/917.ccls.	US-PGPUB; USPAT	AND	ON	2007/07/25 15:04
S11	2759	427/58.ccls. or 427/66.ccls.	US-PGPUB; USPAT	AND	ON	2007/07/25 15:05
S13	7229	313/502-509.ccls.	US-PGPUB; USPAT	AND	ON	2007/07/25 15:07
S14	12662	257/E51.001-E51.052.ccls. or 257/40.ccls. or 257/88-103.ccls.	US-PGPUB; USPAT	AND	ON	2007/07/25 15:08
S15	2740	252/301.16-301.35.ccls.	US-PGPUB; USPAT	AND	ON	2007/07/25 15:09
S16	8690	L03-G05F\$.cmcd.	DERWENT	AND	ON	2007/07/30 15:25
S17	4774	U11-A15\$.emcd.	DERWENT	AND	ON	2007/07/30 15:27
S18	30649	U14-J\$.emcd.	DERWENT	AND	ON	2007/07/30 15:27
S19	1	"2001160488"	DERWENT	AND	ON	2007/08/07 11:51
S20	1	"2003109767"	DERWENT	AND	ON	2007/08/07 11:52
S21	2	"02108058"	DERWENT	AND	ON	2007/08/07 11:53
S22	1	"5411736"	DERWENT	AND	ON	2007/08/07 11:53
S23	1	"63293550"	DERWENT	AND	ON	2007/08/17 13:56
S24	1	"54011736"	DERWENT	AND	ON	2007/10/01 15:09
S25	3	"2004053019"	DERWENT	AND	ON	2007/10/01 16:24
S26	1	10/519107.app.	US-PGPUB; USPAT	AND	ON	2007/10/02 08:14
S27	1	"20060251918"	US-PGPUB; USPAT	AND	ON	2007/08/17 14:05
S28	1	"20060141284"	US-PGPUB; USPAT	AND	ON	2007/08/17 14:07
S29	1	10/519107	US-PGPUB; USPAT	AND	ON	2007/10/01 14:19
S30	1	"20050249970"	DERWENT	AND	ON	2007/10/01 14:20
S31	3	azacarbazole	DERWENT	AND	ON	2007/10/01 15:09
S32	1	aza\$carbazole	DERWENT	AND	ON	2007/10/01 15:09

## EAST Search History

S33	19	azacarbazole or azocarbazole	US-PGPUB; USPAT	AND	ON	2007/10/02 09:18
S34	0	"2003231692"	US-PGPUB; USPAT	AND	ON	2007/10/01 15:17
S35	2	"2003231692"	DERWENT	AND	ON	2007/10/01 15:19
S36	1	"20040086745"	US-PGPUB; USPAT	AND	ON	2007/10/01 15:21
S37	1	"6709772".pn.	US-PGPUB; USPAT	AND	ON	2007/10/01 15:27
S38	13087	electron adj transport	US-PGPUB; USPAT	AND	ON	2007/10/01 15:27
S39	534	S38 same carbazole	US-PGPUB; USPAT	AND	ON	2007/10/01 16:17
S41	3	"2004035709"	DERWENT	AND	ON	2007/10/01 16:17
S42	1	"20070054151"	US-PGPUB; USPAT	AND	ON	2007/10/01 16:26
S43	1	"20040115476"	US-PGPUB; USPAT	AND	ON	2007/10/01 16:50
S44	1	"20030091861"	US-PGPUB; USPAT	AND	ON	2007/10/01 16:35
S45	1	"2002175883"	DERWENT	AND	ON	2007/10/01 16:35
S46	1	"20040151944"	US-PGPUB; USPAT	AND	ON	2007/10/01 16:36
S47	1	"20040185299"	US-PGPUB; USPAT	AND	ON	2007/10/01 16:52
S48	3	"2003040844"	DERWENT	AND	ON	2007/10/02 11:48
S49	0	"07110940"	DERWENT	AND	ON	2007/10/02 08:14
S50	2	"7110940"	DERWENT	AND	ON	2007/10/02 08:15
S51	0	"070110940"	DERWENT	AND	ON	2007/10/03 14:46
S52	1	"2001160488"	DERWENT	AND	ON	2007/10/02 08:54
S53	6934	(\$carboline or \$carbolineyl)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 09:14
S54	15176	428/690.ccls. or 428/917.ccls. or 313/502-509.ccls. or 427/58.ccls. or 427/66.ccls. or 257/E51.001-E51. 052.ccls. or 252/301.16-301.35.ccls.	US-PGPUB; USPAT	AND	ON	2007/10/02 08:55
S55	7724	S54 and electroluminescen\$2	US-PGPUB; USPAT	AND	ON	2007/10/02 08:55
S56	62	S53 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 10:53

## EAST Search History

S57	4	"671406".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 08:56
S58	2	"6830836".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 08:58
S59	4	09/621740	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 08:58
S60	31	(\$az\$1carboline or \$az\$1carbolinyl)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 09:15
S61	23	\$azacarbazole or \$azocarbazole	US-PGPUB; USPAT	AND	ON	2007/10/02 09:18
S62	5746	\$CBP	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 10:53
S63	1501	\$CBP same host	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 10:53
S64	885	S62 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 10:53
S65	643	S63 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 10:54
S66	347	S65 and white	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 10:54
S67	1239	white same phosphoresc\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 11:02
S68	109	S67 and S63	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 10:54

## EAST Search History

S69	2034	blue same phosphoresc\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 15:12
S70	305	S69 and S65	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 11:02
S71	2430	(ultraviolet or violet or purple) same host	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 11:49
S72	113	S71 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 11:53
S73	91	pyridine same (hole adj block\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 11:55
S74	770	pyridine same (electron adj transport\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 11:55
S75	145	S74 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 11:55
S76	21478	phosphoresc\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 15:12
S77	2096	S76 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 15:12
S78	5055	phosphoresc\$4 and host	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 15:13
S79	1419	S78 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 15:12
S80	646	phosphoresc\$4 and (host same carbazole)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 15:14

## EAST Search History

S81	486	S80 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 15:13
S82	833	(host same carbazole)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 15:14
S83	583	S82 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:16
S84	10581	hole adj block\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:16
S85	72	(hole adj block\$4) same deficien\$	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:54
S86	65	(hole adj block\$4) same heterocycl\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:36
S87	35	(hole adj block\$4) and carboline	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:42
S88	251	(hole adj block\$4) same \$carbazole	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:48
S91	521	CBP same (electron adj transport\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:49
S93	349	S91 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:49
S94	711	(electron adj transport\$4) same deficien\$	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 17:00
S95	77	S94 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 16:55

## EAST Search History

S96	770	(electron adj transport\$4) same pyridine	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 17:00
S97	145	S96 and S55	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2007/10/02 17:01

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L22 159 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.43/RID  
 L25 38 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.526/RID  
 L28 6320 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.27/RID  
 L31 3407 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.34/RID  
 L34 1310 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.37/RID  
 L37 7237 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.106/RID  
 L40 6320 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.27/RID  
 L43 27723 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.23/RID  
 L46 810 SEA FILE=REGISTRY ABB=ON PLU=ON 1839.105/RID  
 L47 46998 SEA FILE=REGISTRY ABB=ON PLU=ON L22 OR L25 OR L28 OR L31  
 OR L34 OR L37 OR L40 OR L43 OR L46  
 L50 11329 SEA FILE=HCAPLUS ABB=ON PLU=ON L47  
 L51 QUE ABB=ON PLU=ON LUM!N? OR ELECTROLUM!N? OR ORGANOLUM  
 !N? OR (ELECTRO OR ORGANO OR ORG#) (2A) LUM!N? OR LIGHT? (2A  
 ) (EMIT? OR EMISSION?) OR EL OR E(W) L OR L(W) E(W) D OR OLED  
 OR LED  
 L52 337 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 AND L50  
 L54 59 SEA FILE=HCAPLUS ABB=ON PLU=ON L52 AND DEV/RL  
 L55 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L54 AND (1840-2003)/PRY,AY  
 ,PY  
 L56 215 SEA FILE=HCAPLUS ABB=ON PLU=ON L52 AND (1840-2003)/PRY,AY  
 ,PY  
 L57 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L56 AND PHOTOG?/SC,SX  
 L58 16 SEA FILE=HCAPLUS ABB=ON PLU=ON L55 OR L57  
 L59 75 SEA FILE=HCAPLUS ABB=ON PLU=ON L56 AND RACT/RL  
 L60 70 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND PREP/RL  
 L61 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L60 AND DEVIC?  
 L62 16 SEA FILE=HCAPLUS ABB=ON PLU=ON L56 AND DEVIC?  
 L63 18 SEA FILE=HCAPLUS ABB=ON PLU=ON L58 OR L61 OR L62  
 L64 89 SEA FILE=HCAPLUS ABB=ON PLU=ON L52 AND PHOTOG?/SC,SX  
 L65 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L64 AND (1840-2003)/PRY,AY  
 ,PY  
 L66 18 SEA FILE=HCAPLUS ABB=ON PLU=ON L52 AND ELECTRIC?/SC,SX  
 L67 91 SEA FILE=HCAPLUS ABB=ON PLU=ON L52 AND OPTIC?/SC,SX  
 L68 19 SEA FILE=HCAPLUS ABB=ON PLU=ON L67 AND (1840-2003)/PRY,A  
 Y,PY  
 L69 40 SEA FILE=HCAPLUS ABB=ON PLU=ON L63 OR L65 OR L66 OR L68  
 L70 23 SEA FILE=HCAPLUS ABB=ON PLU=ON L69 AND (1840-2003)/PRY,A  
 Y,PY

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L70 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:912072 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:258700  
 TITLE: Document anticounterfeiting measures based on  
 time-resolved luminescence of materials  
 emitting in two distinct regions and the materials  
 and polymer materials, inks, papers, and markings  
 employing them  
 INVENTOR(S): Morais de Souza, Jucimar  
 PATENT ASSIGNEE(S): Brazil  
 SOURCE: Braz. Pedido PI, 14pp.  
 CODEN: BPXXDX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Portuguese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 2003006544	A	20050906	BR 2003-6544	20031201

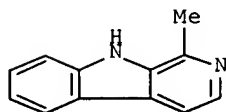
PRIORITY APPLN. INFO.: BR 2003-6544 20031201  
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ED Entered STN: 07 Sep 2006

AB Document anticounterfeiting measures based on time-resolved luminescence of materials emitting in two distinct regions are described which entail measuring the emission intensity in a first spectral region while an excitation source is illuminating the material and in a second region after the excitation is interrupted. Materials with emission in  $\geq 2$  regions suitable for the methods are also described, as are polymer materials, inks, papers, and markings incorporating them.

10/519,107

IT 486-84-0, 1-Methyl-9H-pyrido[3,4-b]indole  
(document anticounterfeiting measures based on time-resolved  
luminescence of materials emitting in two distinct regions  
and materials and polymer materials and inks and papers and  
markings employing them)  
RN 486-84-0 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 1-methyl- (CA INDEX NAME)



IC ICM G02F001-25  
ICS C09K011-06; C09D005-22; G09F003-03  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other  
Related Properties)  
Section cross-reference(s): 42, 43  
ST document anticounterfeiting time resolved luminescence  
IT Counterfeiting  
(anti-; document anticounterfeiting measures based on time-resolved  
luminescence of materials emitting in two distinct regions  
and materials and polymer materials and inks and papers and  
markings employing them)  
IT Luminescent substances  
(document anticounterfeiting measures based on time-resolved  
luminescence of materials emitting in two distinct regions  
and materials and polymer materials and inks and papers and  
markings employing them)  
IT Inks  
(luminescent; document anticounterfeiting measures based  
on time-resolved luminescence of materials emitting in  
two distinct regions and materials and polymer materials and inks  
and papers and markings employing them)  
IT Marking  
Paper  
(security; document anticounterfeiting measures based on  
time-resolved luminescence of materials emitting in two  
distinct regions and materials and polymer materials and inks and  
papers and markings employing them)  
IT Luminescence spectroscopy  
(time-resolved; document anticounterfeiting measures based on  
time-resolved luminescence of materials emitting in two  
distinct regions and materials and polymer materials and inks and  
papers and markings employing them)  
IT 486-84-0, 1-Methyl-9H-pyrido[3,4-b]indole 9003-01-4,  
Polyacrylic acid  
(document anticounterfeiting measures based on time-resolved  
luminescence of materials emitting in two distinct regions  
and materials and polymer materials and inks and papers and  
markings employing them)

L70 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2005:1293917 HCAPLUS Full-text  
DOCUMENT NUMBER: 144:46158  
TITLE: Method for amplification of gene chip signal by  
probe pair  
INVENTOR(S): Song, Ke  
PATENT ASSIGNEE(S): Peop. Rep. China  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 23  
PP.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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10/519,107.

CN 1570140

A

20050126

CN 2003-141844

20030725

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PRIORITY APPLN. INFO.:

CN 2003-141844

20030725

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ED Entered STN: 09 Dec 2005

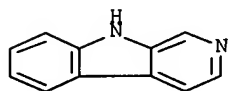
AB The invention provides a method using probe pairs to amplify the signal generated by gene chip. The method comprises designing two or more probes which complement with the different specific sites on the target gene, wherein one probe is fixed in the microarray on the gene chip and is called a capture probe; at least another one is linked covalently or non-covalently to a high-load signal carrier (HSC), and is called a labeling probe. The labeling is actually a labeled target gene with a strong signal-amplifying capability. By applying various HSCs in labeling for signal-amplification and in signal detection, high-throughput anal. of different nucleic acid mols. can be realized. In some preferred embodiments, HSCs like fluorescent polymer microsphere, quantum dot, dendrimer, polyferrocene, and quantum dot-tagged beads are applied in biochip detections, like gene chip or microfluidic chip. With this invention, single labeling event taking place on a microarray that has been labeled can be detected by means of laser confocal scanner, CCD (charge coupled device), fluorescence microscope, or plasma resonance excitation technol. Therefore the provided technol. based on microarrays has ultra high sensitivity, and is especially suitable for gene chip detection in clin. diagnosis.

IT 244-63-3,  $\beta$ -Carboline

(method for amplification of gene chip signal by probe pair)

RN 244-63-3 HCAPLUS

CN 9H-Pyrido[3,4-b]indole (CA INDEX NAME)



IC ICM C12Q001-68

CC 3-1 (Biochemical Genetics)

Section cross-reference(s): 6, 9

IT Affinity chromatography

Capillary electrochromatography

Capillary electrophoresis

Capillary isoelectric focusing

Capillary zone electrophoresis

DNA microarray technology

Electrokinetic chromatography

Electron acceptors

Electron donors

Helix (conformation)

Isotachophoresis

Luminescence, electroluminescence

Micellar electrokinetic capillary chromatography

Micelles

Nucleic acid hybridization

Size-exclusion chromatography

Test kits

(method for amplification of gene chip signal by probe pair)

IT 50-07-7, Mitomycin c 50-18-0, Cyclophosphamide 50-28-2, Estradiol,

biological studies 61-73-4, Methylene blue 66-97-7, Psoralen

83-89-6, Quinacrine 86-74-8, Carbazole 92-62-6, Proflavin

92-83-1, Xanthene 100-33-4, Pentamidine 202-14-2,

2H-[1]Benzothiopyrano[4,3,2-cd]indazole 244-63-3,

$\beta$ -Carboline 271-44-3, Indazole 288-32-4, Imidazole,

biological studies 512-64-1, Echinomycin 517-66-8, Dicentrine

519-23-3, Ellipticine 908-54-3, Berenil 1239-45-8, Ethidium

bromide 1303-00-0, Gallium arsenide (GaAs), biological studies

1306-19-0, Cadmium oxide (CdO), biological studies 1314-13-2, Zinc

oxide, biological studies 1332-29-2, Tin oxide 1404-15-5,

Nogalamycin 1438-30-8, Netropsin 2447-54-3, Sanguinarine

4533-39-5, Nitracrine 7240-37-1, 7-Amino-actinomycin d 9002-04-4,

Thrombin 11056-06-7, Bleomycin 12795-78-7, Triostin 15663-27-1,

Cisplatin 19716-69-9, Protoberberine 20830-81-3, Daunomycin

23214-92-8, Doxorubicin 23491-45-4, Hoechst 33258 23491-52-3,

Hoechst 33342 25316-40-9, Adriamycin 25535-16-4, Propidium iodide

39389-47-4, Distamycin 47165-04-8, Dapi 50926-11-9, Indium tin

oxide 51264-14-3 77879-89-1, Gilvocarcin m 87205-99-0,

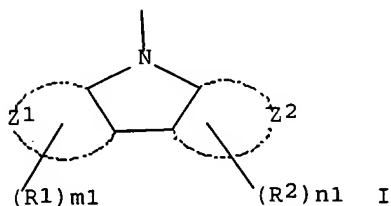
Dihydrotanshinone I 93908-02-2, Rebeccamycin 96087-37-5,

10/519,107

Photobiotin 107091-89-4, Thiazole orange 120500-15-4, Leinamycin  
124412-57-3, Dynemicin a 131594-43-9, Elsamicin 134688-25-8,  
Luzopeptin 144510-96-3, Pixantrone 217087-73-5, SYBR Green  
(method for amplification of gene chip signal by probe pair)

L70 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2005:591723 HCAPLUS Full-text  
DOCUMENT NUMBER: 143:122842  
TITLE: Organic electroluminescent  
device for optical display and lighting  
apparatus  
INVENTOR(S): Oshiyama, Tomohiro; Kato, Eisaku; Kita, Hiroshi  
PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 53 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005183345	A	20050707	JP 2003-426570	20031224
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PRIORITY APPLN. INFO.:			JP 2003-426570	20031224
			<--	
ED Entered STN: 08 Jul 2005				
GI				

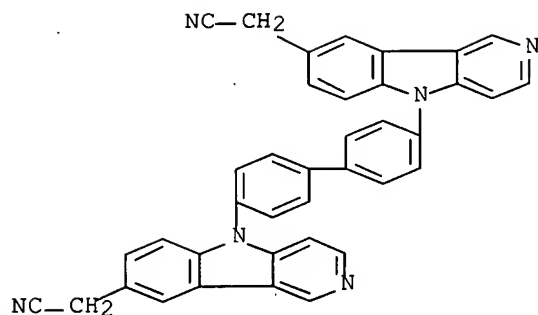


AB Disclosed is an organic electroluminescent device comprising a compound containing the partial structure represented by I [Z1 and Z2 = atoms for forming aromatic hydrocarbon or heterocyclic ring; R1 and R2 = -L1-R3 [L1 =alkylene, O and S; and R3 = substituted group with Hammett's  $\sigma$  in 0.01-0.80] and -Ar1-R4 [Ar1 = arylene and divalent aromatic heterocyclic group; and R4 = substituted group with Hammett's  $\sigma$  in 0.08-0.80]; m1 and n1 = 0-4 integers, and  $1 \leq m1 + n1 \leq 8$ ].

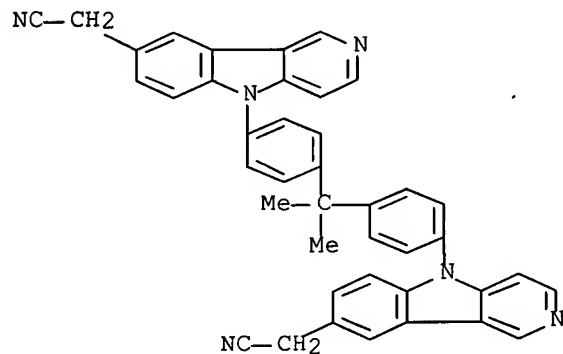
IT 857090-50-7 857090-54-1  
(host material; organic electroluminescent device  
for optical display and lighting apparatus)

RN 857090-50-7 HCAPLUS

CN 5H-Pyrido[4,3-b]indole-8-acetonitrile, 5,5'-[1,1'-biphenyl]-4,4'-  
diylbis- (9CI) (CA INDEX NAME)



RN 857090-54-1 HCAPLUS  
 CN 5H-Pyrido[4,3-b]indole-8-acetonitrile, 5,5'-[(1-methylethylidene)di-4,1-phenylene]bis- (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
 ICS C07D209-86; C09K011-06  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 74  
 ST org electroluminescent device optical display lighting app  
 IT Electroluminescent devices  
 Light sources  
 Optical imaging devices  
 Phosphorescent substances  
 (organic electroluminescent device for optical display and lighting apparatus)  
 IT 857090-47-2 857090-48-3 857090-49-4 857090-50-7  
 857090-51-8 857090-52-9 857090-53-0 857090-54-1  
 857090-55-2 857090-56-3 857090-57-4 857090-58-5 857090-59-6  
 857090-60-9 857090-61-0 857090-62-1 857090-63-2 857090-64-3  
 857090-65-4 857090-66-5 857090-67-6 857090-68-7 857090-69-8  
 (host material; organic electroluminescent device for optical display and lighting apparatus)  
 IT 76-05-1, Trifluoroacetic acid, reactions 3001-15-8, 4,4'-Diiodobiphenyl 6825-20-3, 3,6-Dibromocarbazole  
 (organic electroluminescent device for optical display and lighting apparatus)  
 IT 857090-70-1P 857090-71-2P  
 (organic electroluminescent device for optical display and lighting apparatus)  
 IT 94928-86-6 376367-93-0  
 (phosphorescent guest material; organic electroluminescent device for optical display and lighting apparatus)

10/519,107

ACCESSION NUMBER: 2005:569462 HCAPLUS Full-text  
DOCUMENT NUMBER: 143:86831  
TITLE: Monomer and their polymers for organic electroluminescent devices, displays, and lighting apparatus  
INVENTOR(S): Taka, Hideo; Kita, Hiroshi  
PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 62 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005171123	A	20050630	JP 2003-414491	20031212
			<--	
PRIORITY APPLN. INFO.:			JP 2003-414491	20031212
			<--	

OTHER SOURCE(S): MARPAT 143:86831

ED Entered STN: 01 Jul 2005

AB The monomers are represented by R1R2C:CR3(OR4) (R1-R3 = H, F, alkyl, cycloalkyl, aryl; R4 = alkyl, cycloalkyl, aryl). The devices are operated at low drive voltage and show improved luminescence intensity and efficiency, and long service life.

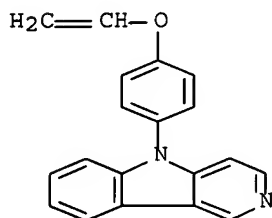
IT 855869-23-7P 855869-24-8DP, terminated with pentafluorophenyl (monomer and their polymers for organic electroluminescent devices, displays, and lighting apparatus)

RN 855869-23-7 HCAPLUS

CN Iridium, [5-(ethenyloxy)-2-(2-pyridinyl-κN)phenyl-κC]bis[2-(2-pyridinyl-κN)phenyl-κC]-, polymer with 9-[4-(ethenyloxy)phenyl]-9H-carbazole and 5-[4-(ethenyloxy)phenyl]-5H-pyrido[4,3-b]indole (9CI) (CA INDEX NAME)

CM 1

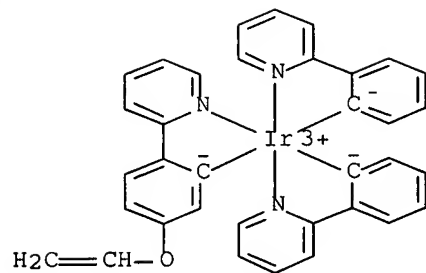
CRN 855869-22-6  
CMF C19 H14 N2 O



CM 2

CRN 855869-20-4  
CMF C35 H26 Ir N3 O  
CCI CCS

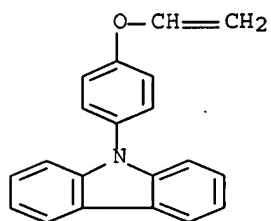
10/519,107



CM 3

CRN 159293-77-3

CMF C20 H15 N O



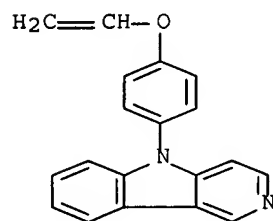
RN 855869-24-8 HCAPLUS

CN Iridium, [5-(ethenyloxy)-2-(2-pyridinyl-κN)phenyl-κC]bis[2-(2-pyridinyl-κN)phenyl-κC]-, polymer with cyclohexyl 2-methyl-2-propenoate and 5-[4-(ethenyloxy)phenyl]-5H-pyrido[4,3-b]indole (9CI) (CA INDEX NAME)

CM 1

CRN 855869-22-6

CMF C19 H14 N2 O

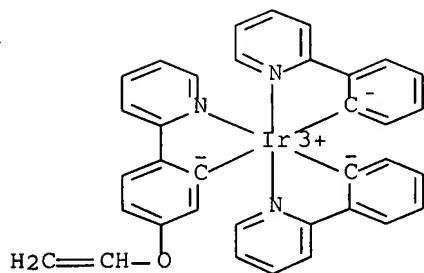


CM 2

CRN 855869-20-4

CMF C35 H26 Ir N3 O

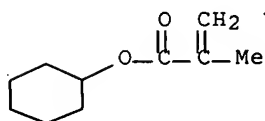
CCI CCS



CM 3

CRN 101-43-9

CMF C10 H16 O2



- IC ICM C08F016-14  
ICS C07D209-82; C07D471-04; C07F015-00; C08F008-42; C09K011-06;  
H05B033-14
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic  
and Other Reprographic Processes)  
Section cross-reference(s): 27, 29, 35, 38, 73
- ST polymer electroluminescent display lighting;  
vinylxyphenylcarbazole polymer org EL device
- IT Electroluminescent devices  
(displays, organic; monomer and their polymers for organic  
electroluminescent devices, displays, and  
lighting apparatus)
- IT Luminescent screens  
(electroluminescent, organic; monomer and their  
polymers for organic electroluminescent devices,  
displays, and lighting apparatus)
- IT Fluoropolymers, preparation  
(monomer and their polymers for organic electroluminescent  
devices, displays, and lighting apparatus)
- IT Electroluminescent devices  
(organic; monomer and their polymers for organic  
electroluminescent devices, displays, and  
lighting apparatus)
- IT 19205-19-7 376367-95-2 693794-98-8 800395-01-1  
(dopant; monomer and their polymers for organic  
electroluminescent devices, displays, and  
lighting apparatus)
- IT 19205-19-7D, reaction product with vinylxymethylcarbazole polymer  
90451-66-4 90451-66-4D, terminated 693794-98-8D, reaction product  
with vinylxymethylcarbazole polymer 855867-75-3 855867-76-4  
855869-25-9 855869-27-1  
(monomer and their polymers for organic electroluminescent  
devices, displays, and lighting apparatus)
- IT 22236-19-7DP, reaction product with vinyl polymers 159293-78-4P  
855869-21-5P 855869-23-7P 855869-24-8DP,  
terminated with pentafluorophenyl  
(monomer and their polymers for organic electroluminescent  
devices, displays, and lighting apparatus)
- IT 855867-73-1P  
(monomer and their polymers for organic electroluminescent  
devices, displays, and lighting apparatus)
- IT 159293-77-3P 855867-72-0P 855869-20-4P

10/519,107

(monomer and their polymers for organic electroluminescent devices, displays, and lighting apparatus)  
 IT 108-05-4, Vinyl acetate, reactions 116-14-3, Tetrafluoroethylene, reactions 51035-40-6, 2-(4-Hydroxyphenyl)pyridine 222620-05-5 (monomer and their polymers for organic electroluminescent devices, displays, and lighting apparatus)

L70 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:522753 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:34938  
 TITLE: Organic electroluminescent device for optical display and illumination apparatus  
 INVENTOR(S): Kato, Eisaku; Ueda, Noriko; Fukuda, Mitsuhiro; Oshiyama, Tomohiro; Kita, Hiroshi  
 PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 51 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005158289	A	20050616	JP 2003-390913	20031120
			<--	
			JP 2003-390913	20031120
			<--	

PRIORITY APPLN. INFO.: JP 2003-390913 20031120

OTHER SOURCE(S): MARPAT 143:34938

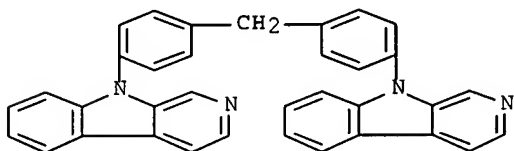
ED Entered STN: 17 Jun 2005

AB The invention relates to an organic electroluminescent device, suited for use in making an optical display and an illumination apparatus, comprising the organic compound represented by Ar1-L-Ar2 [Ar1 and Ar2 = aryl and aromatic heterocyclic groups; and L = alkylene]. The organic compound is used as a host material of a phosphorescent guest, a hole blocking material, and a hole transporting material.

IT 853016-93-0 853016-94-1  
 (organic electroluminescent device for optical display and illumination apparatus)

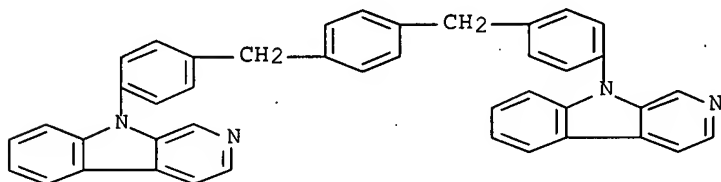
RN 853016-93-0 HCAPLUS

CN 9H-Pyrido[3,4-b]indole, 9,9'-(methylenedi-4,1-phenylene)bis- (9CI)  
 (CA INDEX NAME)



RN 853016-94-1 HCAPLUS

CN 9H-Pyrido[3,4-b]indole, 9,9'-[1,4-phenylenebis(methylene-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other

Related Properties)  
 ST org electroluminescent device optical display  
 illumination app  
 IT Illumination  
 (apparatus; organic electroluminescent device for  
 optical display and illumination apparatus)  
 IT Electroluminescent devices  
 Optical imaging devices  
 (organic electroluminescent device for optical  
 display and illumination apparatus)  
 IT 58473-78-2 160176-63-6 853016-93-0 853016-94-1  
 853016-95-2 853016-96-3 853016-97-4 853016-98-5 853016-99-6  
 853017-00-2 853017-01-3  
 (organic electroluminescent device for optical  
 display and illumination apparatus)  
 IT 607731-64-6P 848724-46-9P 848724-49-2P 848724-55-0P  
 848724-57-2P 848724-60-7P 853017-02-4P  
 (organic electroluminescent device for optical  
 display and illumination apparatus)  
 IT 101-77-9 13029-09-9  
 (organic electroluminescent device for optical  
 display and illumination apparatus)

L70 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:323476 HCAPLUS Full-text  
 DOCUMENT NUMBER: 142:400713  
 TITLE: Organic electroluminescent (EL  
 ) elements with long life and high emission  
 efficiency and display devices and  
 lighting apparatus using them  
 INVENTOR(S): Ko, Hideo; Kita, Hiroshi  
 PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 58 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005100881	A	20050414	JP 2003-334908	20030926
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PRIORITY APPLN. INFO.:			JP 2003-334908	20030926
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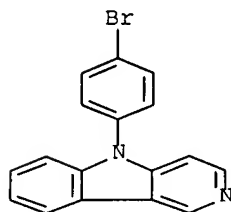
ED Entered STN: 15 Apr 2005

AB The elements have  $\geq 1$  organic layers,  $\geq 1$  of which contain multi-branched compds. consisting of light-emitting core compds. bearing dendritic repeating units (generation  $\geq 2$ ) Ar1L1 [Ar1 = trivalent (un)substituted aromatic or heteroarom. group; L1 = linking group selected from O, S, Se, Te, PR1, BR2, SiR3R4, GeR5R6, CH2, CH2CH2, OCH2; R1-6 = alkyl, aryl] and partial structures of B derivs., silol derivs., phenanthroline derivs., azacarbazole derivs., styryl derivs., and/or F-substituted triarylamine derivs., between cathodes and anodes.

IT 849935-29-1  
 (for metal complex preparation; organic EL elements containing  
 light-emitting dendritic metal complexes for  
 displays with high emission efficiency and long life)

RN 849935-29-1 HCAPLUS

CN 5H-Pyrido[4,3-b]indole, 5-(4-bromophenyl)- (9CI) (CA INDEX NAME)



IT 849935-36-0 849936-35-2



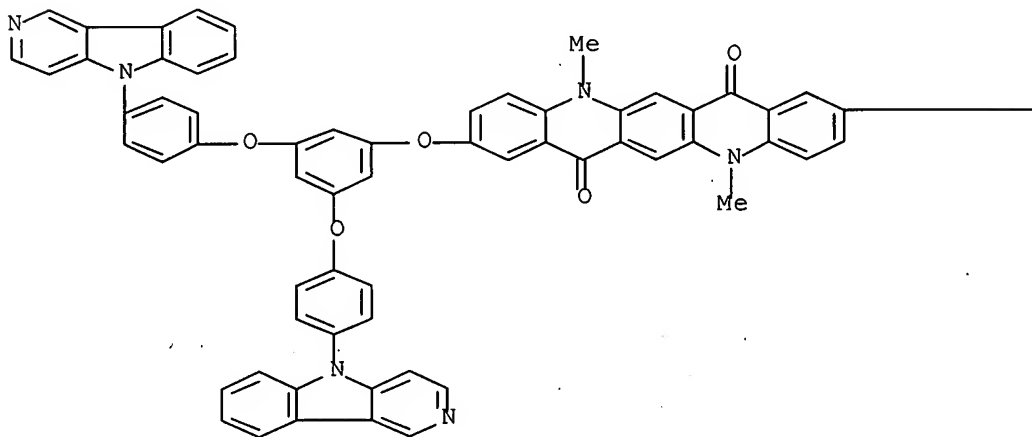
10/519,107

(light-emitting layer; organic EL  
elements containing light-emitting dendritic metal  
complexes for displays with high emission efficiency and long life)

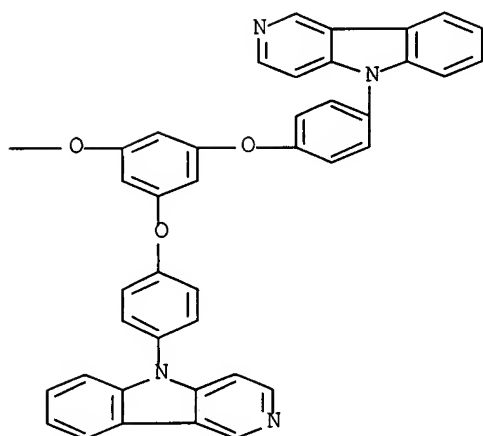
RN 849935-36-0 HCAPLUS

CN Quino[2,3-b]acridine-7,14-dione, 2,9-bis[3,5-bis[4-(5H-pyrido[4,3-b]indol-5-yl)phenoxy]phenoxy]-5,12-dihydro-5,12-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A

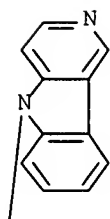
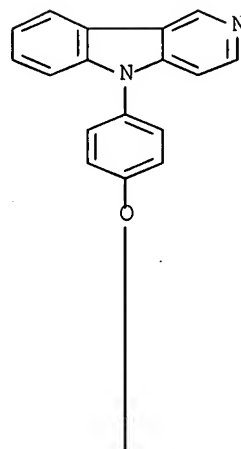
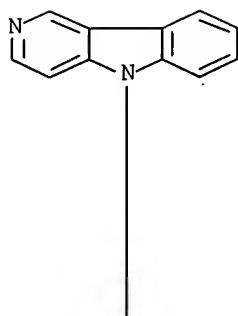


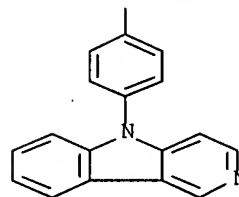
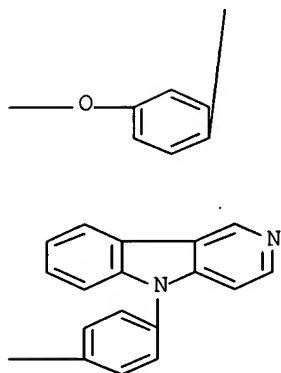
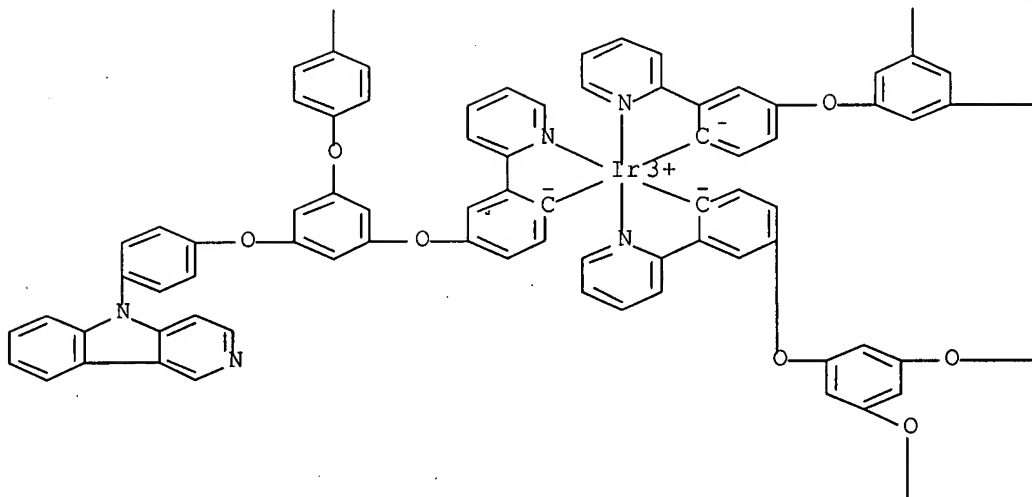
PAGE 1-B



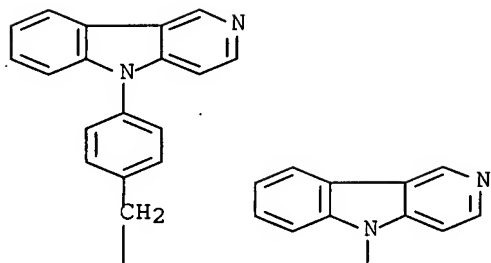
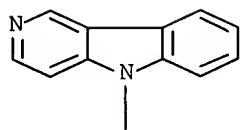
RN 849936-35-2 HCAPLUS

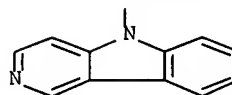
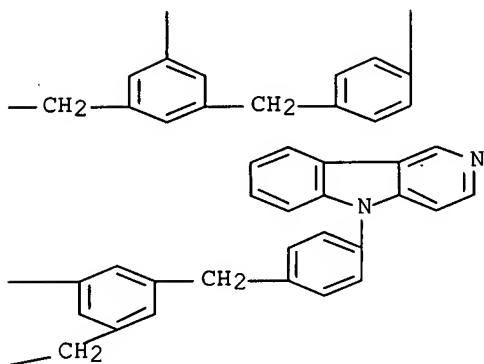
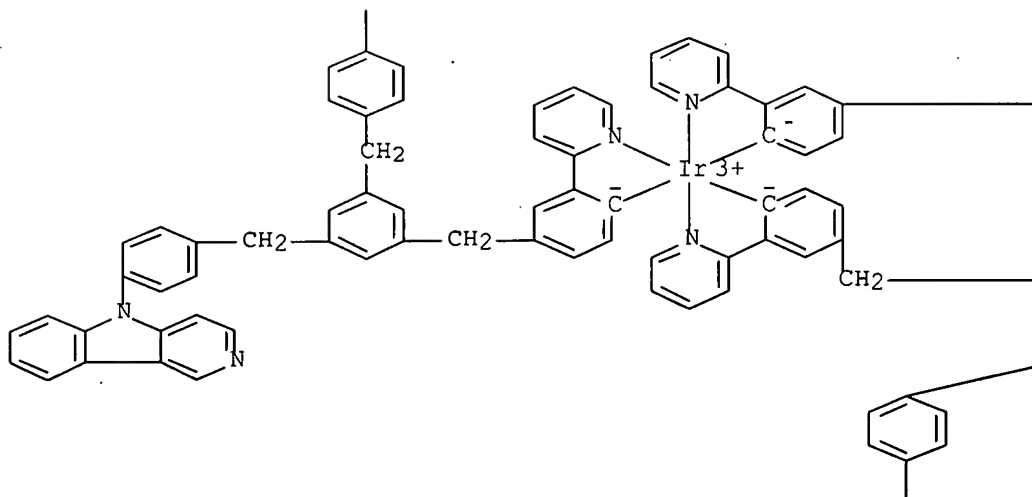
CN Iridium, tris[4-[3,5-bis[4-(5H-pyrido[4,3-b]indol-5-yl)phenoxy]phenoxy]-2-(2-pyridinyl-kN)phenyl-kC]- (9CI) (CA INDEX NAME)





IT 849936-34-1P  
 (light-emitting layer; organic EL  
 elements containing light-emitting dendritic metal  
 complexes for displays with high emission efficiency and long life)  
 RN 849936-34-1 HCAPLUS  
 CN Iridium, tris[4-[[[3,5-bis[[4-(5H-pyrido[4,3-b]indol-5-yl)phenyl]methyl]phenyl]methyl]-2-(2-pyridinyl-κN)phenyl-κC]- (9CI) (CA INDEX NAME)





IC ICM H05B033-14  
ICS C09K011-06  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic  
and Other Reprographic Processes)  
Section cross-reference(s): 29, 73  
ST electroluminescent element dendrimer light  
emission efficiency; org EL dendritic metal complex  
durability; display phosphor branched boron complex LCD  
IT Electroluminescent devices  
(displays; organic EL elements containing light-  
emitting dendritic metal complexes for displays with high  
emission efficiency and long life)  
IT Luminescent screens

(electroluminescent; organic EL elements  
containing light-emitting dendritic metal complexes  
for displays with high emission efficiency and long life)

IT Light sources  
Liquid crystal displays  
Phosphors  
(organic EL elements containing light-emitting  
dendritic metal complexes for displays with high emission  
efficiency and long life)

IT 92-88-6, 4,4'-Biphenol 106-41-2, 4-Bromophenol 4373-60-8  
17299-97-7, 1,3,5-Trischloromethylbenzene 19205-19-7,  
N,N'-Dimethylquinacridone 98061-22-4 240432-83-1 833485-13-5  
849935-29-1  
(for metal complex preparation; organic EL elements containing  
light-emitting dendritic metal complexes for  
displays with high emission efficiency and long life)

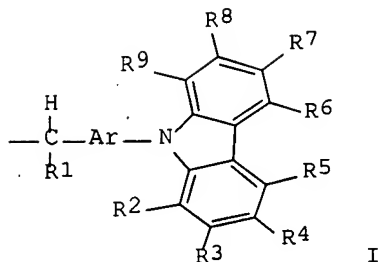
IT 25067-59-8, Poly(vinylcarbazole) 849935-36-0  
849936-35-2 850014-99-2  
(light-emitting layer; organic EL  
elements containing light-emitting dendritic metal  
complexes for displays with high emission efficiency and long life)

IT 849935-35-9P 849936-33-0P 849936-34-1P 850015-22-4P  
(light-emitting layer; organic EL  
elements containing light-emitting dendritic metal  
complexes for displays with high emission efficiency and long life)

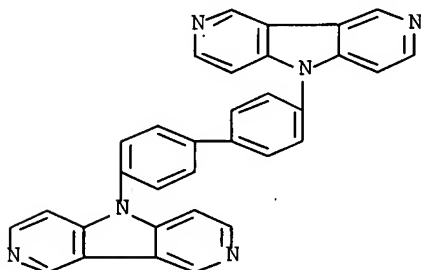
L70 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2005:283960 HCAPLUS Full-text  
DOCUMENT NUMBER: 142:344890  
TITLE: Organic electroluminescent element,  
illuminator, display and compound  
INVENTOR(S): Ueda, Noriko; Yamada, Taketoshi; Kita, Hiroshi;  
Fukuda, Mitsuhiro  
PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan  
SOURCE: U.S. Pat. Appl. Publ., 64 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005069729	A1	20050331	US 2004-946499	20040921
JP 2005129478	A	20050519	JP 2004-34774	20040212
WO 2005039246	A1	20050428	WO 2004-JP14307	20040922
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG EP 1679940 A1 20060712 EP 2004-773481 20040922 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR PRIORITY APPLN. INFO.: JP 2003-339583 A 20030930 WO 2004-JP14307 W 20040922				

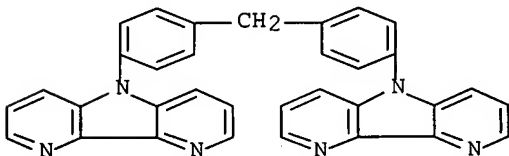
OTHER SOURCE(S): MARPAT 142:344890  
ED Entered STN: 03 Apr 2005  
GI



- AB The invention refers to an organic electroluminescent element comprising a light emission layer and a hole blocking layer adjacent to the light emission layer, wherein, (i) the light emission layer contains a compound having a specified partial structure I [Ar = aryl or heteroaryl; R2-9 = H, or substituent, and groups may be combined with each other to form a ring; R1 = H, alkyl or cycloalkyl] and having a mol. weight of  $\leq 1700$ ; and (ii) the hole blocking layer contains a derivative selected from the group consisting of a styryl derivative, a B derivative and a carboline derivative
- IT 787582-73-4 848724-67-4  
(organic electroluminescent containing carbazole derivative in emissive layer, and styryl, boron or carboline derivative in hole blocking layer)
- RN 787582-73-4 HCAPLUS
- CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[1,1'-biphenyl]-4,4'-diylbis- (9CI) (CA INDEX NAME)



- RN 848724-67-4 HCAPLUS
- CN 5H-Pyrrolo[3,2-b:4,5-b']dipyridine, 5,5'-(methylenedi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)



- IC ICM H05B033-12
- INCL 428690000; 428917000; 313504000; 313506000; 257088000; 349069000
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST electroluminescent display device
- IT Electroluminescent devices  
(displays; organic electroluminescent containing carbazole derivative in emissive layer, and styryl, boron or carboline derivative in

hole blocking layer)  
 IT Luminescent screens  
 (electroluminescent; organic  
 electroluminescent containing carbazole derivative in emissive  
 layer, and styryl, boron or carboline derivative in hole blocking  
 layer)  
 IT Electroluminescent devices  
 (organic electroluminescent containing carbazole derivative in  
 emissive layer, and styryl, boron or carboline derivative in hole  
 blocking layer)  
 IT 135804-06-7 142289-08-5 156645-72-6 492446-89-6 492446-97-6  
 787582-73-4 848724-46-9 848724-47-0 848724-48-1  
 848724-49-2 848724-50-5 848724-51-6 848724-52-7 848724-53-8  
 848724-54-9 848724-55-0 848724-56-1 848724-57-2 848724-58-3  
 848724-59-4 848724-60-7 848724-61-8 848724-62-9 848724-63-0  
 848724-64-1 848724-65-2 848724-66-3 848724-67-4  
 (organic electroluminescent containing carbazole derivative in  
 emissive layer, and styryl, boron or carboline derivative in hole  
 blocking layer)

L70 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:140278 HCAPLUS Full-text

DOCUMENT NUMBER: 142:229127

TITLE: Organic electroluminescent elements with  
 low emission voltage and power consumption and  
 lighting apparatus and displays using them

INVENTOR(S): Kato, Eisaku; Oshiyama, Tomohiro; Suzurizato,  
 Yoshiyuki; Kita, Hiroshi

PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 38 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005044790	A	20050217	JP 2004-195396	20040701

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PRIORITY APPLN. INFO.: JP 2003-193521 A 20030708

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OTHER SOURCE(S): MARPAT 142:229127

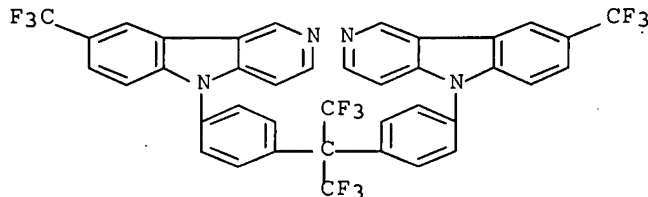
ED Entered STN: 18 Feb 2005

AB The elements, useful for blue- or white-emitting backlights for LCD, have layers containing  
 compds. L1Xn [L1 = polyvalent hydrocarbon or aromatic linking group; X = (un)substituted N-  
 containing aromatic heterocyclic group linked to L1 at N; n ≥ 2] adjacent to light- emitting layers  
 between anodes and cathodes. The layers show good hole-barrier properties.

IT 844510-68-5  
 (hole-barrier layer; organic EL elements containing N-containing  
 heterocyclic compds. in hole-barrier layers for displays with low  
 emission voltage and power consumption)

RN 844510-68-5 HCAPLUS

CN 5H-Pyrido[4,3-b]indole, 5,5'-[[2,2,2-trifluoro-1-  
 (trifluoromethyl)ethylidene]di-4,1-phenylene]bis[8-(trifluoromethyl)-  
 (9CI) (CA INDEX NAME)



IC ICM H05B033-22

ICS C09K011-06; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic



and Other Reprographic Processes)  
 Section cross-reference(s): 73

ST LCD backlight blue emitting org EL;  
 electroluminescent device hole barrier adjacent  
 layer; EL display low light emission  
 voltage

IT Electroluminescent devices  
 (blue-emitting; organic EL elements containing N-containing  
 heterocyclic compds. in hole-barrier layers for displays with low  
 emission voltage and power consumption)

IT Electroluminescent devices  
 (displays; organic EL elements containing N-containing heterocyclic  
 compds. in hole-barrier layers for displays with low emission  
 voltage and power consumption)

IT Luminescent screens  
 (electroluminescent; organic EL elements  
 containing N-containing heterocyclic compds. in hole-barrier layers for  
 displays with low emission voltage and power consumption)

IT Light sources  
 (for LCD; organic EL elements containing N-containing heterocyclic  
 compds. in hole-barrier layers for displays with low emission  
 voltage and power consumption)

IT Liquid crystal displays  
 (organic EL elements containing N-containing heterocyclic compds. in  
 hole-barrier layers for displays with low emission voltage and  
 power consumption)

IT Electroluminescent devices  
 (white-emitting; organic EL elements containing N-containing  
 heterocyclic compds. in hole-barrier layers for displays with low  
 emission voltage and power consumption)

IT 844510-61-8 844510-62-9 844510-64-1 844510-65-2 844510-66-3  
 844510-68-5 844510-70-9 844510-71-0 844510-72-1  
 844510-73-2 844510-74-3 844510-75-4 844510-76-5  
 (hole-barrier layer; organic EL elements containing N-containing  
 heterocyclic compds. in hole-barrier layers for displays with low  
 emission voltage and power consumption)

IT 376367-93-0  
 (phosphor, light-emitting layer; organic  
 EL elements containing N-containing heterocyclic compds. in  
 hole-barrier layers for displays with low emission voltage and  
 power consumption)

L70 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:1080107 HCAPLUS Full-text  
 DOCUMENT NUMBER: 142:45702  
 TITLE: Organic electroluminescent  
 device for illumination and display  
 devices  
 INVENTOR(S): Fukuda, Mitsuhiro; Kita, Hiroshi  
 PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 70 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004355898	A	20041216	JP 2003-150762	20030528
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PRIORITY APPLN. INFO.:			JP 2003-150762	20030528
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ED Entered STN: 17 Dec 2004

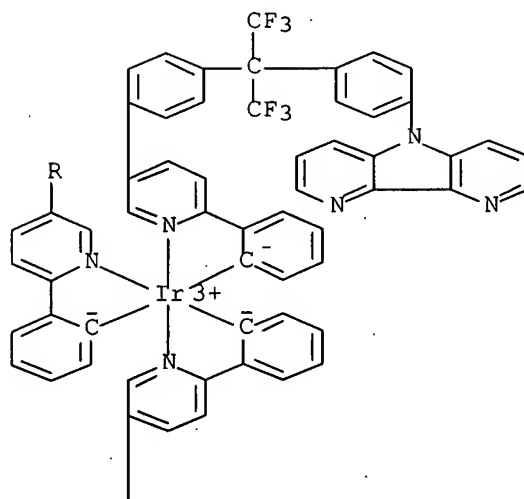
AB The invention relates to an organic electroluminescent device, suited for use in making  
 illumination and display devices, comprising a metal complex having ligands containing electron  
 transporting groups.

IT 807360-66-3  
 (organic electroluminescent device for  
 illumination and display devices)

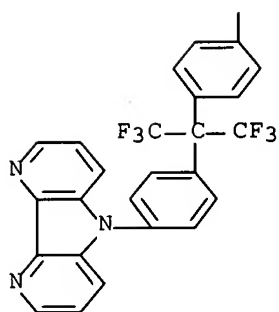
RN 807360-66-3 HCAPLUS

CN Iridium, tris[2-[5-[4-[2,2,2-trifluoro-1-[4-(5H-pyrrolo[3,2-b:4,5-  
 b']dipyridin-5-yl)phenyl]-1-(trifluoromethyl)ethyl]phenyl]-2-pyridinyl-  
 κN]phenyl-κC]- (9CI) (CA INDEX NAME)

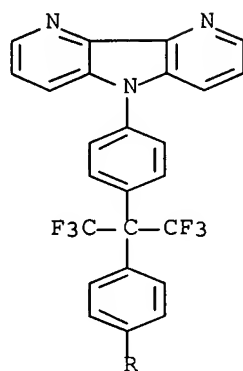
PAGE 1-A



PAGE 2-A



PAGE 3-A



ICS C09K011-06; G02F001-1335  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other  
 Related Properties)  
 Section cross-reference(s): 74  
 ST org electroluminescent device illumination display  
 electron transporting material  
 IT Electroluminescent devices  
 Optical imaging devices  
 Phosphorescent substances  
 (organic electroluminescent device for  
 illumination and display devices)  
 IT Coordination compounds  
 (organic electroluminescent device for  
 illumination and display devices)  
 IT 693794-98-8 807360-63-0 807360-66-3 807360-69-6  
 807360-72-1  
 (organic electroluminescent device for  
 illumination and display devices)

L70 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:934666 HCAPLUS Full-text

DOCUMENT NUMBER: 141:403603

TITLE: Material for organic electroluminescent  
 device, organic electroluminescent  
 device, illuminating device and  
 display

INVENTOR(S): Katoh, Eisaku; Kita, Hiroshi; Oshiyama, Tomohiro;  
 Fukuda, Mitsuhiro; Suzuri, Yoshiyuki; Ueda, Noriko

PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan

SOURCE: PCT Int. Appl., 82 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004095891	A1	20041104	WO 2004-JP5621	20040420

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 CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
 GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,  
 KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
 MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,  
 SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
 VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE,  
 DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT,  
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
 ML, MR, NE, SN, TD, TG

CN 1701642	A	20051123	CN 2004-80000921	20040420
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EP 1617710	A1	20060118	EP 2004-728448	20040420
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
 PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,  
 PL, SK, HR

US 2006121308	A1	20060608	US 2005-532027	20050421
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PRIORITY APPLN. INFO.:	JP 2003-117886	A	20030423
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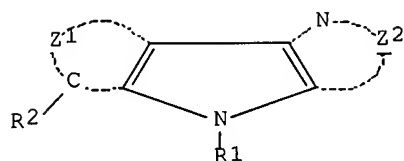
JP 2004-15487	A	20040123
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WO 2004-JP5621	W	20040420
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OTHER SOURCE(S): MARPAT 141:403603

ED Entered STN: 06 Nov 2004

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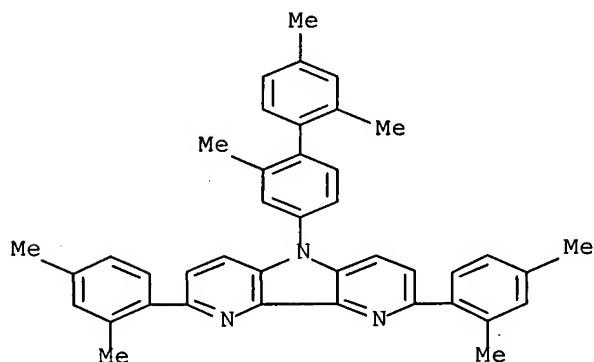
I

AB An organic EL (electroluminescent) device is disclosed which has excellent characteristics such as high luminous efficiency, good external quantum efficiency, and long driving duration in case where it is driven at a high temperature of 50°. An illuminating device and a display using such an organic EL device are also disclosed. A pyrrole material, represented by I (R1 = (substituted) alkyl, (substituted) cycloalkyl, (substituted) aryl, (substituted) heterocyclyl; R2 = H, substituent; Z1 = atomic group for forming 5- to 7-membered ring structure; Z2 = atomic group for forming 5- to 7-membered N-containing heterocycle), for organic EL devices which can be preferably used for such an organic EL device is further disclosed.

IT 787577-90-6 787578-15-8 787578-33-0  
(pyrrole material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)

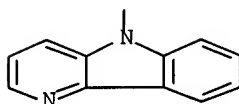
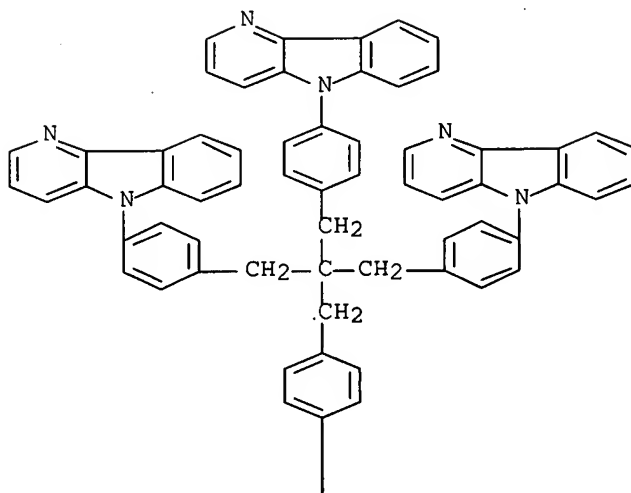
RN 787577-90-6 HCAPLUS

CN 5H-Pyrrolo[3,2-b:4,5-b']dipyridine, 2,8-bis(2,4-dimethylphenyl)-5-(2,2',4'-trimethyl[1,1'-biphenyl]-4-yl)- (9CI) (CA INDEX NAME)

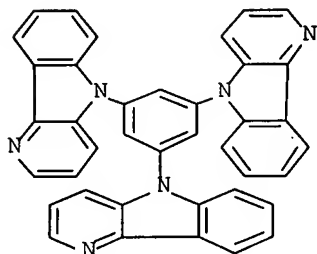


RN 787578-15-8 HCAPLUS

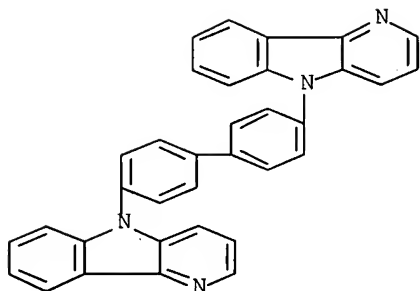
CN 5H-Pyrido[3,2-b]indole, 5,5'-[2,2-bis[[4-(5H-pyrido[3,2-b]indol-5-yl)phenyl]methyl]-1,3-propanediyl]di-4,1-phenylene]bis- (9CI) (CA INDEX NAME)



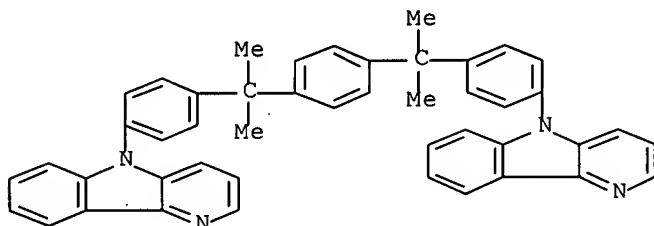
RN 787578-33-0 HCAPLUS  
 CN 5H-Pyrido[3,2-b]indole, 5,5',5'''-(1,3,5-benzenetriyl)tris- (9CI) (CA INDEX NAME)



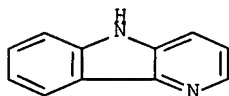
IT 787577-80-4P 787578-21-6P  
 (pyrrole material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)  
 RN 787577-80-4 HCAPLUS  
 CN 5H-Pyrido[3,2-b]indole, 5,5'-[1,1'-biphenyl]-4,4'-diylbis- (CA INDEX NAME)



RN 787578-21-6 HCAPLUS  
 CN 5H-Pyrido[3,2-b]indole, 5,5'-[1,4-phenylenebis((1-methylethylidene)-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)



IT 245-08-9,  $\delta$ -Carboline  
 (pyrrole material preparation; pyrrole material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)  
 RN 245-08-9 HCAPLUS  
 CN 5H-Pyrido[3,2-b]indole (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM H05B033-22  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 73  
 ST electroluminescent display org pyrrole material illuminating device  
 IT Electroluminescent devices  
 (displays; pyrrole material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)  
 IT Luminescent screens  
 Luminescent substances  
 (electroluminescent; pyrrole material for organic electroluminescent device, organic electroluminescent device, illuminating

device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)

- IT 787577-90-6 787578-15-8 787578-33-0  
(pyrrole material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)
- IT 787577-80-4P 787578-21-6P  
(pyrrole material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)
- IT 245-08-9, 8-Carboline 3001-15-8, 4,4'-Diiodobiphenyl 787578-41-0  
(pyrrole material preparation; pyrrole material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L70 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:934665 HCAPLUS Full-text

DOCUMENT NUMBER: 141:403602

TITLE: Material for organic electroluminescent device, organic electroluminescent device, illuminating device and display

INVENTOR(S): Katoh, Eisaku; Kita, Hiroshi; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Suzuri, Yoshiyuki; Ueda, Noriko

PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan

SOURCE: PCT Int. Appl., 90 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004095890	A1	20041104	WO 2004-JP5616	20040420

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RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CN 1701642	A	20051123	CN 2004-80000921	20040420
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PRIORITY APPLN. INFO.:	JP 2003-117886	A	20030423
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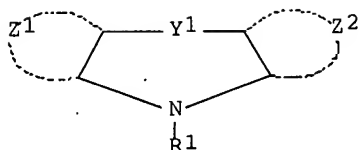
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JP 2004-15487	A	20040123
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OTHER SOURCE(S): MARPAT 141:403602

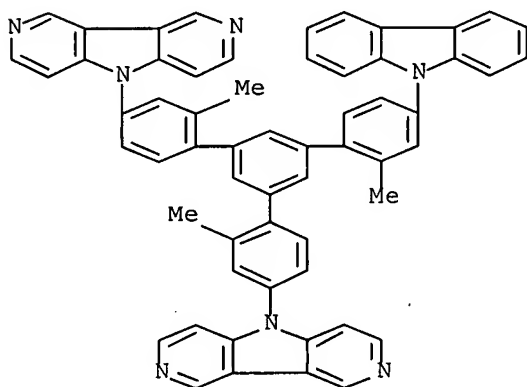
ED Entered STN: 06 Nov 2004

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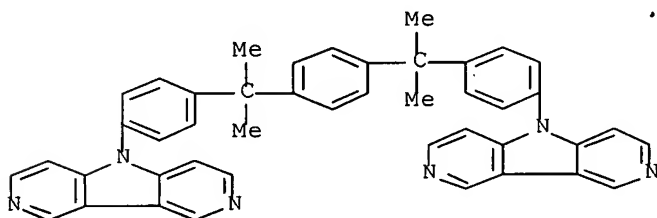


I

- AB A material for organic electroluminescent devices and a novel compound are disclosed which enable to obtain an organic electroluminescent device, an illuminating device and a display having high luminous efficiency and long life. This material for organic electroluminescent devices is characterized by being a compound which has a mol. weight of  $\geq 450$  and is represented by the following general formula I [R1 = (substituted) alkyl, (substituted) cycloalkyl, (substituted) aryl, (substituted) heterocyclyl; Z1, Z2 = atomic group necessary for forming 5- to 7-membered N-containing aromatic heterocyclic ring structure; Y1 = divalent linking group, single bond].
- IT 787577-86-0  
(material for organic electroluminescent device,  
organic electroluminescent device, illuminating  
device and display showing high luminous  
efficiency and long life)
- RN 787577-86-0 HCAPLUS
- CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[5'-[4-(9H-carbazol-9-yl)-2-methylphenyl]-2,2''-dimethyl[1,1':3',1''-terphenyl]-4,4''-diyl]bis-  
(9CI) (CA INDEX NAME)

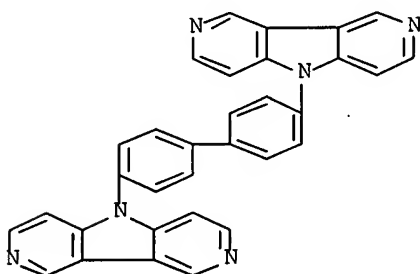


- IT 787577-64-4P  
(material for organic electroluminescent device,  
organic electroluminescent device, illuminating  
device and display showing high luminous  
efficiency and long life)
- RN 787577-64-4 HCAPLUS
- CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[1,4-phenylenebis[(1-methylethylidene)-4,1-phenylene]]bis- (9CI) (CA INDEX NAME)





IT 787582-73-4P  
 (material preparation; material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency and long life)  
 RN 787582-73-4 HCAPLUS  
 CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[1,1'-biphenyl]-4,4'-diylbis-(9CI) (CA INDEX NAME)



IC ICM H05B033-22  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 73  
 ST org electroluminescent display electroluminescence material illuminating device  
 IT Electroluminescent devices  
 (displays; material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency and long life)  
 IT Luminescent screens  
 Luminescent substances  
 (electroluminescent; material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency and long life)  
 IT 787577-86-0 787578-25-0 787578-27-2 787578-29-4  
 (material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency and long life)  
 IT 787577-64-4P  
 (material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency and long life)  
 IT 531-85-1, Benzydine dihydrochloride 2716-10-1 27353-36-2  
 (material preparation; material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency and long life)  
 IT 787582-73-4P  
 (material preparation; material for organic electroluminescent device, organic electroluminescent device, illuminating device and display showing high luminous efficiency and long life)  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L70 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:934664 HCAPLUS Full-text  
 DOCUMENT NUMBER: 141:403601  
 TITLE: Organic electroluminescent device and display showing high

INVENTOR(S): luminous efficiency and long life  
Suzuri, Yoshiyuki; Kita, Hiroshi; Kato, Eisaku;  
Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Ueda,  
Noriko

PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan

SOURCE: PCT Int. Appl., 156 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 3

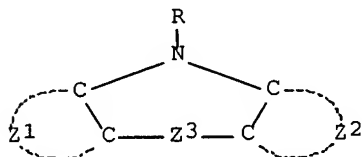
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004095889	A1	20041104	WO 2004-JP5603	20040420
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RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CN 1701642	A	20051123	CN 2004-80000921	20040420
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EP 1617711	A1	20060118	EP 2004-728453	20040420
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
US 2005249970	A1	20051110	US 2004-519107	20041223
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PRIORITY APPLN. INFO.:			JP 2003-117886	A 20030423
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			JP 2004-15487	A 20040123
			WO 2004-JP5603	W 20040420

OTHER SOURCE(S): MARPAT 141:403601

ED Entered STN: 06 Nov 2004

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I

AB The title organic electroluminescent device is characterized by comprising composition layers between a pair of electrodes which composition layers include at least a phosphorescent light-emitting layer and at least one layer of which composition layers contains a compound represented by the following general formula I [Z1 = (substituted) aromatic heterocyclic ring; Z2 = (substituted) aromatic heterocyclic ring, (substituted) aromatic hydrocarbon ring; Z3 = divalent linking group, single bond; R = H, substituent].

IT 151937-22-3 787577-28-0 787577-32-6  
787577-34-8 787577-37-1 787577-40-6  
787577-43-9 787577-47-3 787577-51-9  
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787577-64-4 787577-66-6 787577-72-4  
787577-74-6 787577-83-7 787577-86-0  
787577-90-6 787577-93-9 787577-95-1  
787577-98-4 787578-01-2 787578-04-5

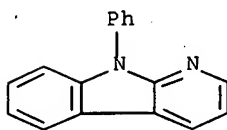
10/519,107

787578-07-8 787578-09-0 787578-11-4  
787578-13-6 787578-15-8 787578-17-0  
787578-31-8 787578-33-0 787578-37-4

(compound in organic electroluminescent device and  
display showing high luminous efficiency and long life)

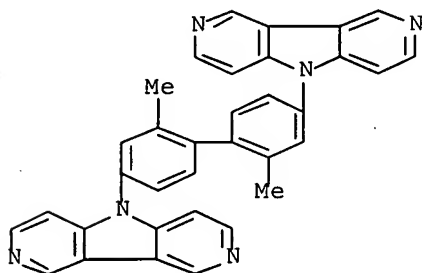
RN 151937-22-3 HCAPLUS

CN 9H-Pyrido[2,3-b]indole, 9-phenyl- (9CI) (CA INDEX NAME)



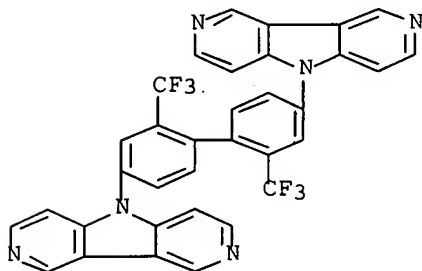
RN 787577-28-0 HCAPLUS

CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-(2,2'-dimethyl[1,1'-biphenyl])-  
4,4'-diyl)bis- (CA INDEX NAME)



RN 787577-32-6 HCAPLUS

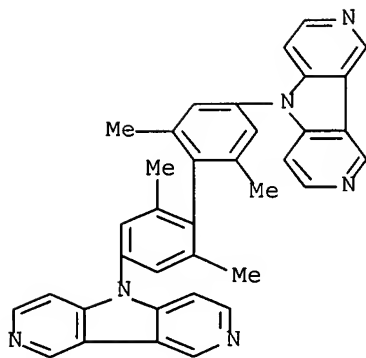
CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-(2,2'-  
bis(trifluoromethyl)[1,1'-biphenyl]-4,4'-diyl)bis- (9CI) (CA INDEX  
NAME)



RN 787577-34-8 HCAPLUS

CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-(2,2',6,6'-tetramethyl[1,1'-  
biphenyl]-4,4'-diyl)bis- (9CI) (CA INDEX NAME)

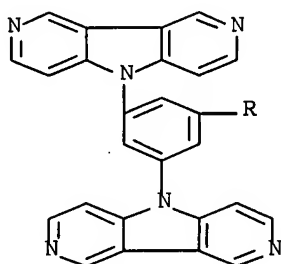
10/519,107



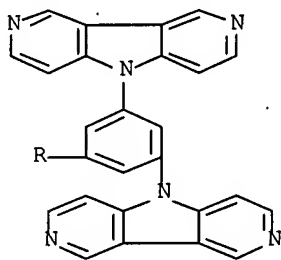
RN 787577-37-1 HCAPLUS

CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5',5'',5'''-[1,1'-biphenyl]-3,3',5,5'-tetrayltetrakis- (9CI) (CA INDEX NAME)

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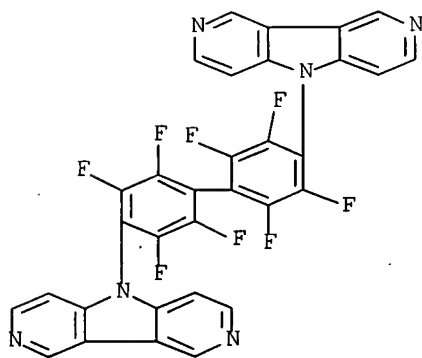
PAGE 2-A



RN 787577-40-6 HCAPLUS

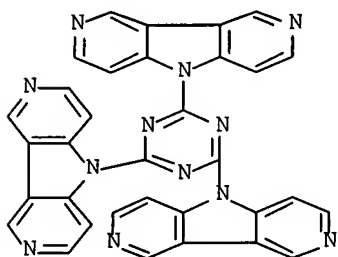
CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)bis- (9CI) (CA INDEX NAME)

10/519,107



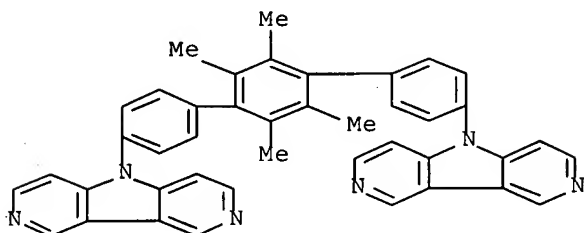
RN 787577-43-9 HCAPLUS

CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5',5''-(1,3,5-triazine-2,4,6-triyl)tris- (9CI) (CA INDEX NAME)



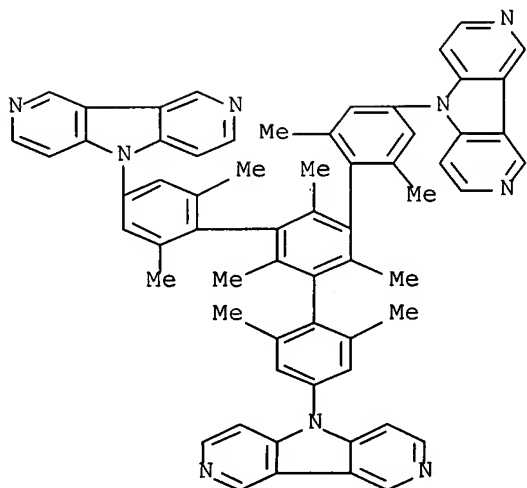
RN 787577-47-3 HCAPLUS

CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-(2',3',5',6'-tetramethyl[1,1':4',1''-terphenyl]-4,4''-diyl)bis- (9CI) (CA INDEX NAME)



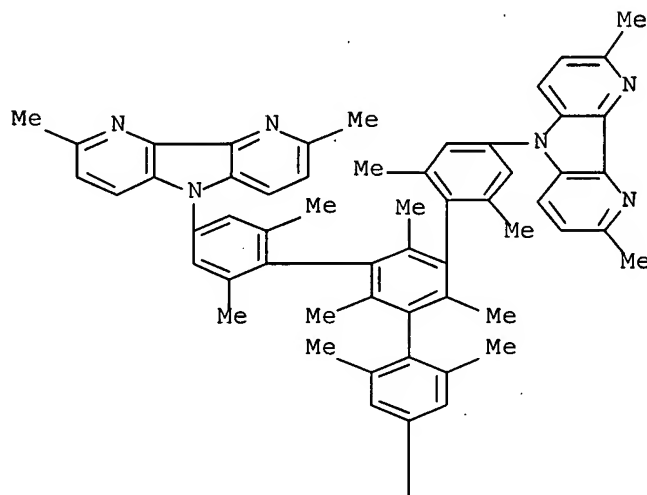
RN 787577-51-9 HCAPLUS

CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[5'-[2,6-dimethyl-4-(5H-pyrrolo[3,2-c:4,5-c']dipyridin-5-yl)phenyl]-2,2',2'',4',6,6,6'''-heptamethyl[1,1':3',1''-terphenyl]-4,4''-diyl]bis- (9CI) (CA INDEX NAME)

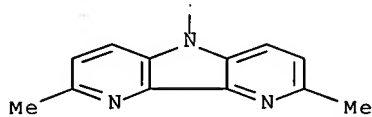


RN 787577-53-1 HCAPLUS  
 CN 5H-Pyrrolo[3,2-b:4,5-b']dipyridine, 5,5'-[5'-[4-(2,8-dimethyl-5H-pyrrolo[3,2-b:4,5-b']dipyridin-5-yl)-2,6-dimethylphenyl]-2,2',2'',4',6,6,6'''-heptamethyl[1,1':3',1''-terphenyl]-4,4''-diyl]bis[2,8-dimethyl- (9CI) (CA INDEX NAME)

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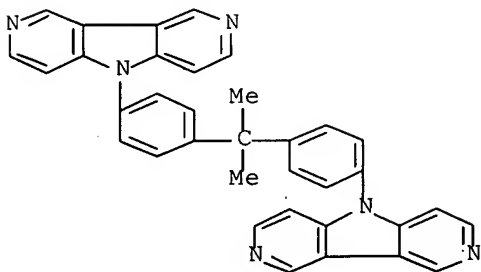
PAGE 2-A



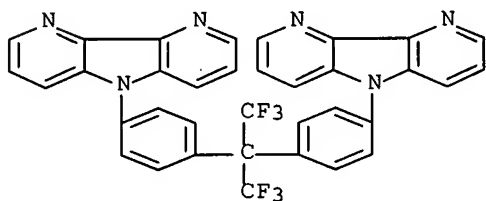
RN 787577-56-4 HCAPLUS  
 CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[(1-methylethylidene)di-4,1-

10/519,107

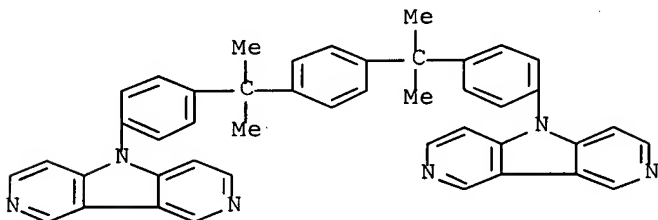
phenylene]bis- (9CI) (CA INDEX NAME)



RN 787577-59-7 HCAPLUS  
CN 5H-Pyrrolo[3,2-b:4,5-b']dipyridine, 5,5'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethyldene]di-4,1-phenylene]bis- (9CI) (CA INDEX NAME)

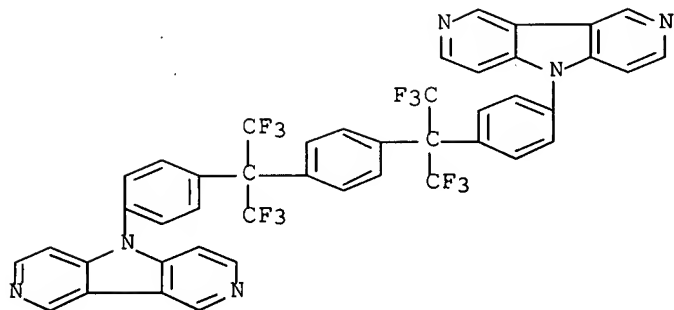


RN 787577-64-4 HCAPLUS  
CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[1,4-phenylenebis[(1-methylethyldene)-4,1-phenylene]]bis- (9CI) (CA INDEX NAME)



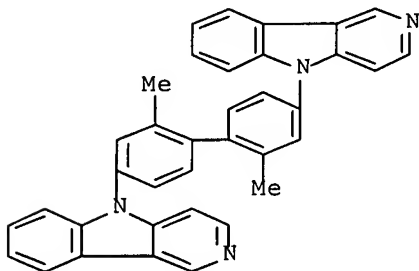
RN 787577-66-6 HCAPLUS  
CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[1,4-phenylenebis[[2,2,2-trifluoro-1-(trifluoromethyl)ethyldene]-4,1-phenylene]]bis- (9CI) (CA INDEX NAME)

10/519,107



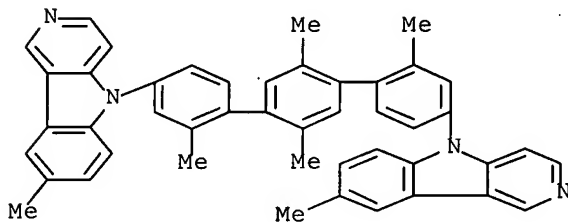
RN 787577-72-4 HCAPLUS

CN 5H-Pyrido[4,3-b]indole, 5,5'-(2,2'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis- (9CI) (CA INDEX NAME)



RN 787577-74-6 HCAPLUS

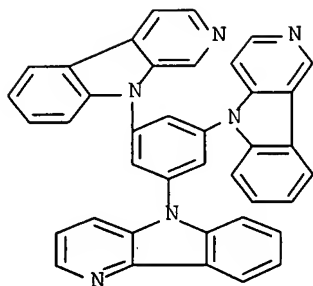
CN 5H-Pyrido[4,3-b]indole, 5,5'-(2,2',2'',5'-tetramethyl[1,1':4',1''-terphenyl]-4,4''-diyl)bis[8-methyl- (9CI) (CA INDEX NAME)



RN 787577-83-7 HCAPLUS

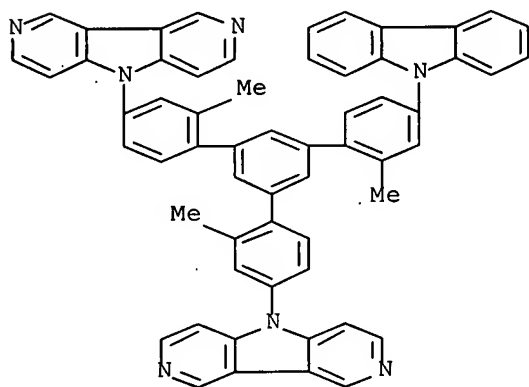
CN 5H-Pyrido[3,2-b]indole, 5-[3-(5H-pyrido[4,3-b]indol-5-yl)-5-(9H-pyrido[3,4-b]indol-9-yl)phenyl]- (CA INDEX NAME)





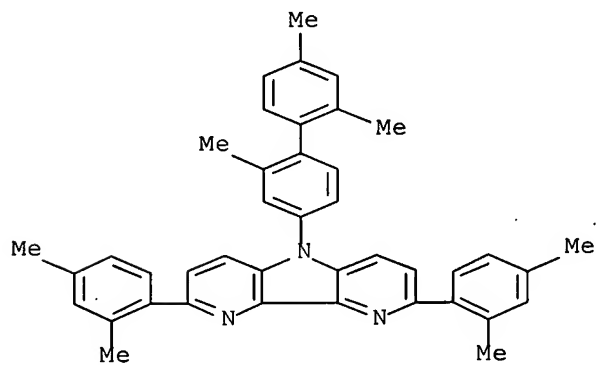
RN 787577-86-0 HCAPLUS

CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[5'-[4-(9H-carbazol-9-yl)-2-methylphenyl]-2,2''-dimethyl[1,1':3',1''-terphenyl]-4,4''-diyl]bis- (9CI) (CA INDEX NAME)



RN 787577-90-6 HCAPLUS

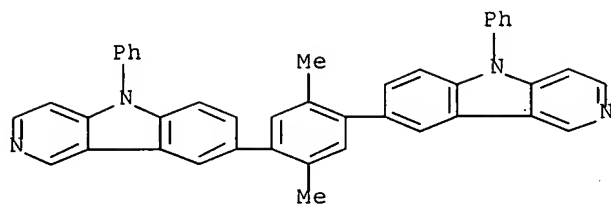
CN 5H-Pyrrolo[3,2-b:4,5-b']dipyridine, 2,8-bis(2,4-dimethylphenyl)-5-(2,2',4'-trimethyl[1,1'-biphenyl]-4-yl)- (9CI) (CA INDEX NAME)



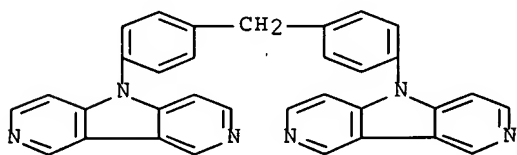
RN 787577-93-9 HCAPLUS

CN 5H-Pyrido[4,3-b]indole, 8,8'-(2,5-dimethyl-1,4-phenylene)bis[5-phenyl]- (9CI) (CA INDEX NAME)

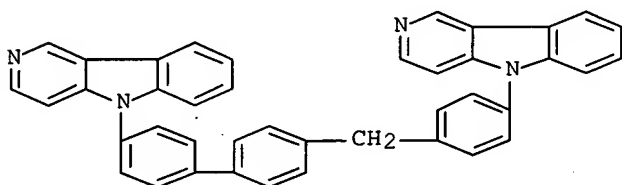
10/519,107



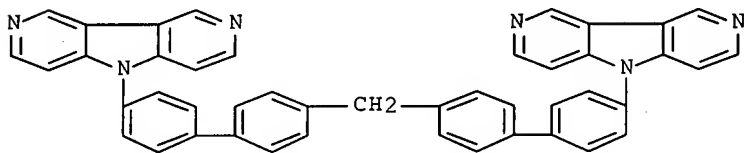
RN 787577-95-1 HCAPLUS  
CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-(methylenedi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)



RN 787577-98-4 HCAPLUS  
CN 5H-Pyrido[4,3-b]indole, 5-[4-[[4'-(5H-pyrido[4,3-b]indol-5-yl)[1,1'-biphenyl]-4-yl]methyl]phenyl]- (9CI) (CA INDEX NAME)

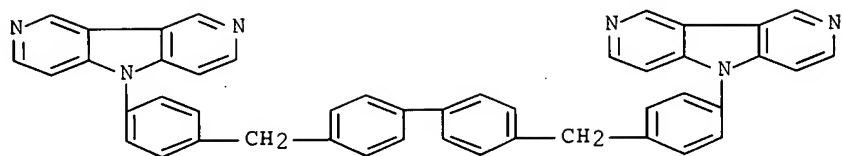


RN 787578-01-2 HCAPLUS  
CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[methylenebis([1,1'-biphenyl]-4,4'-diyl)]bis- (9CI) (CA INDEX NAME)



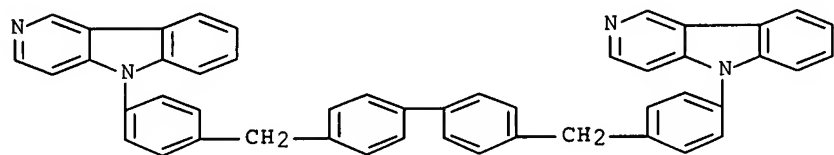
RN 787578-04-5 HCAPLUS  
CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[[[1,1'-biphenyl]-4,4'-diylbis(methylene-4,1-phenylene)]]bis- (9CI) (CA INDEX NAME)

10/519,107



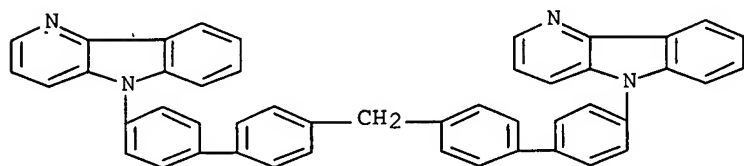
RN 787578-07-8 HCAPLUS

CN 5H-Pyrido[4,3-b]indole, 5,5'-[[1,1'-biphenyl]-4,4'-diylbis(methylene-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)



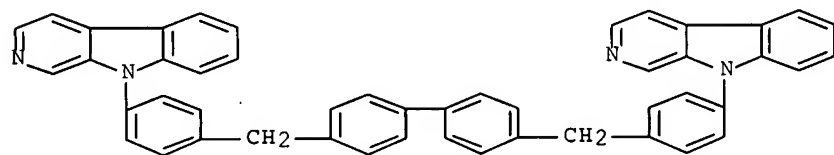
RN 787578-09-0 HCAPLUS

CN 5H-Pyrido[3,2-b]indole, 5,5'-[methylenebis([1,1'-biphenyl]-4',4-diyl)]bis- (9CI) (CA INDEX NAME)



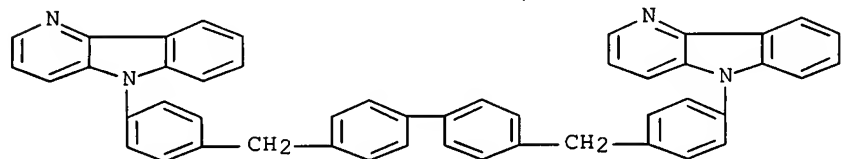
RN 787578-11-4 HCAPLUS

CN 9H-Pyrido[3,4-b]indole, 9,9'-[[1,1'-biphenyl]-4,4'-diylbis(methylene-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)



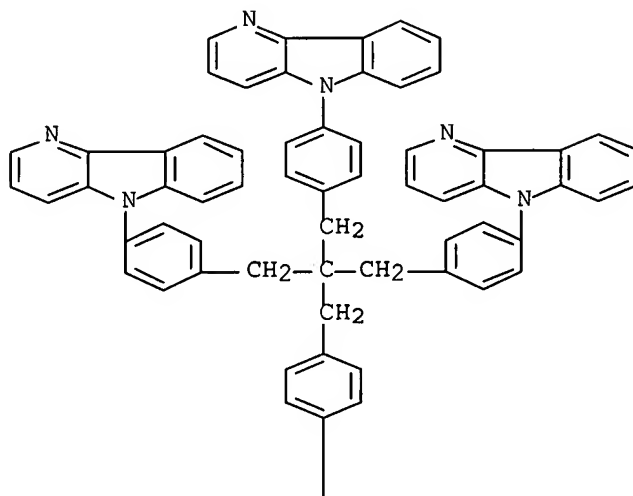
RN 787578-13-6 HCAPLUS

CN 5H-Pyrido[3,2-b]indole, 5,5'-[[1,1'-biphenyl]-4,4'-diylbis(methylene-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

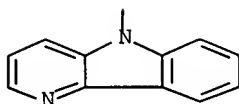


RN 787578-15-8 HCAPLUS  
 CN 5H-Pyrido[3,2-b]indole, 5,5'-[[2,2-bis[[4-(5H-pyrido[3,2-b]indol-5-yl)phenyl]methyl]-1,3-propanediyl]di-4,1-phenylene]bis- (9CI) (CA INDEX NAME)

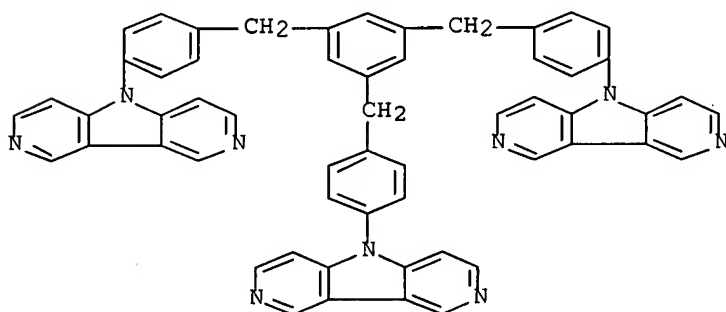
PAGE 1-A



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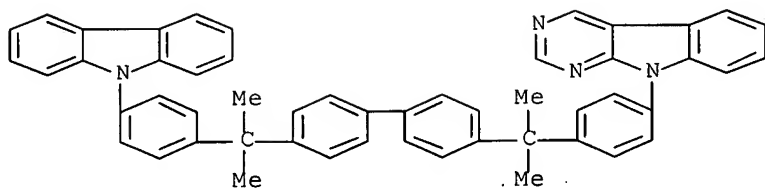


RN 787578-17-0 HCAPLUS  
 CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5',5'-[1,3,5-benzenetriyltris(methylene-4,1-phenylene)]tris- (9CI) (CA INDEX NAME)

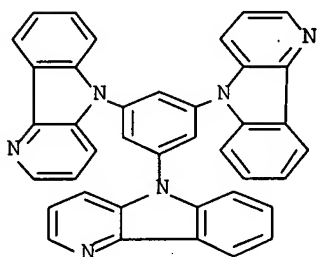


RN 787578-31-8 HCAPLUS  
 CN 9H-Pyrimido[4,5-b]indole, 9-[4-[1-[4'-[1-[4-(9H-carbazol-9-yl)phenyl]-1-methylethyl][1,1'-biphenyl]-4-yl]-1-methylethyl]phenyl]- (9CI) (CA INDEX NAME)

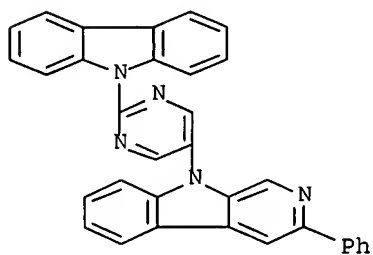
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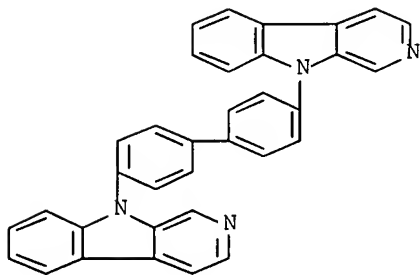
RN 787578-33-0 HCAPLUS  
CN 5H-Pyrido[3,2-b]indole, 5,5',5'''-(1,3,5-benzenetriyl)tris- (9CI) (CA INDEX NAME)



RN 787578-37-4 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 9-[2-(9H-carbazol-9-yl)-5-pyrimidinyl]-3-phenyl- (9CI) (CA INDEX NAME)

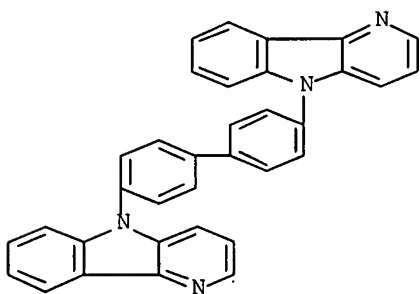


IT 787577-77-9P 787577-80-4P 787578-23-8P  
(compound in organic electroluminescent device and display showing high luminous efficiency and long life)  
RN 787577-77-9 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 9,9'-[1,1'-biphenyl]-4,4'-diylbis- (9CI) (CA INDEX NAME)



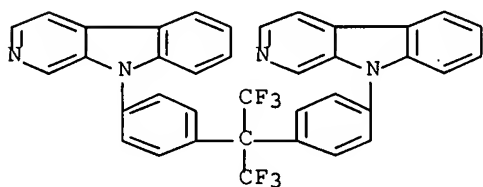
RN 787577-80-4 HCAPLUS

CN 5H-Pyrido[3,2-b]indole, 5,5'-[1,1'-biphenyl]-4,4'-diylbis- (CA INDEX NAME)



RN 787578-23-8 HCAPLUS

CN 9H-Pyrido[3,4-b]indole, 9,9'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]di-4,1-phenylene]bis- (9CI) (CA INDEX NAME)



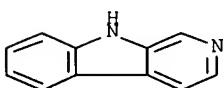
IT 244-63-3,  $\beta$ -Carboline 244-69-9,

$\gamma$ -Carboline 245-08-9,  $\delta$ -Carboline

(compound preparation; compound in organic electroluminescent device and display showing high luminous efficiency and long life)

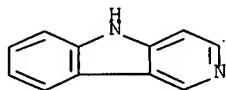
RN 244-63-3 HCAPLUS

CN 9H-Pyrido[3,4-b]indole (CA INDEX NAME)

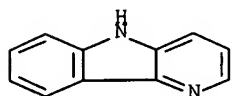


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RN 244-69-9 HCAPLUS  
CN 5H-Pyrido[4,3-b]indole (7CI, 8CI, 9CI) (CA INDEX NAME)

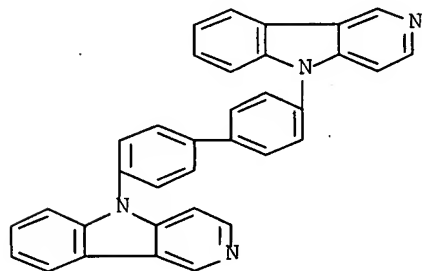


RN 245-08-9 HCAPLUS  
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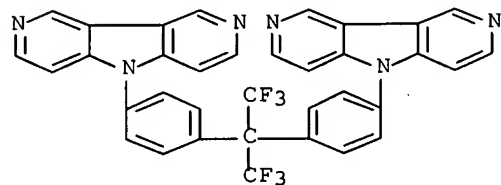


IT 787577-68-8P 787578-19-2P 787578-21-6P  
(compound preparation; compound in organic electroluminescent device and display showing high luminous efficiency and long life)

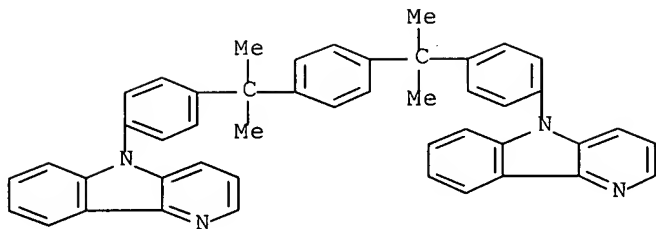
RN 787577-68-8 HCAPLUS  
CN 5H-Pyrido[4,3-b]indole, 5,5'-[1,1'-biphenyl]-4,4'-diylbis- (CA INDEX NAME)



RN 787578-19-2 HCAPLUS  
CN 5H-Pyrrolo[3,2-c:4,5-c']dipyridine, 5,5'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]di-4,1-phenylene]bis- (CA INDEX NAME)



RN 787578-21-6 HCAPLUS  
CN 5H-Pyrido[3,2-b]indole, 5,5'-[1,4-phenylenebis[(1-methylethylidene)-4,1-phenylene]]bis- (9CI) (CA INDEX NAME)



IC ICM H05B033-22  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 73  
 ST org electroluminescent device display  
 electroluminescence material  
 IT Electroluminescent devices  
 (displays; organic electroluminescent device and display showing high luminous efficiency and long life)  
 IT Luminescent screens  
 Luminescent substances  
 (electroluminescent; organic electroluminescent device and display showing high luminous efficiency and long life)  
 IT 151937-22-3 343780-34-7 787577-28-0 787577-30-4  
 787577-32-6 787577-34-8 787577-37-1  
 787577-40-6 787577-43-9 787577-45-1  
 787577-47-3 787577-49-5 787577-51-9  
 787577-53-1 787577-56-4 787577-59-7  
 787577-61-1 787577-64-4 787577-66-6  
 787577-72-4 787577-74-6 787577-83-7  
 787577-86-0 787577-88-2 787577-90-6  
 787577-93-9 787577-95-1 787577-98-4  
 787578-01-2 787578-04-5 787578-07-8  
 787578-09-0 787578-11-4 787578-13-6  
 787578-15-8 787578-17-0 787578-25-0 787578-27-2  
 787578-29-4 787578-31-8 787578-33-0  
 787578-37-4  
 (compound in organic electroluminescent device and display showing high luminous efficiency and long life)  
 IT 787577-77-9P 787577-80-4P 787578-23-8P  
 (compound in organic electroluminescent device and display showing high luminous efficiency and long life)  
 IT 244-63-3,  $\beta$ -Carboline 244-69-9,  
 $\gamma$ -Carboline 245-08-9,  $\delta$ -Carboline 1095-78-9  
 3001-15-8, 4,4'-Diiodobiphenyl 13029-08-8 787578-41-0  
 787578-44-3  
 (compound preparation; compound in organic electroluminescent device and display showing high luminous efficiency and long life)  
 IT 787577-68-8P 787578-19-2P 787578-21-6P  
 (compound preparation; compound in organic electroluminescent device and display showing high luminous efficiency and long life)  
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L70 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:816723 HCAPLUS Full-text

DOCUMENT NUMBER: 141:340502

TITLE: Organic electroluminescent devices with high luminance, good quantum efficiency, and durability and displays and illumination devices therefrom

INVENTOR(S): Fukuda, Mitsuhiro; Suzurizato, Yoshiyuki; Kita, Hiroshi

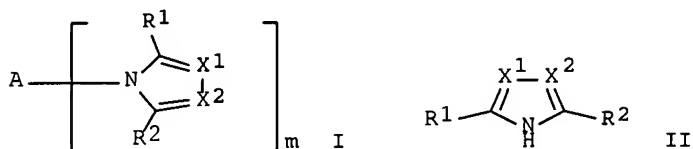
PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan



SOURCE: Jpn. Kokai Tokkyo Koho, 46 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004281296	A	20041007	JP 2003-73384	20030318
PRIORITY APPLN. INFO.:			JP 2003-73384	20030318

OTHER SOURCE(S): MARPAT 141:340502  
 ED Entered STN: 07 Oct 2004  
 GI

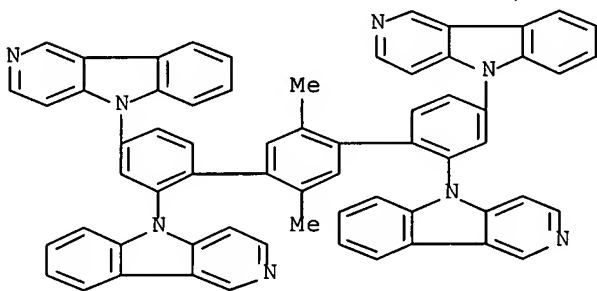


AB The electroluminescent (EL) devices have  $\geq 1$  layers containing I (A = linking group; R1, R2 = monovalent substituent; m = 1-6; X1 = :N, :CR3; X2 = :N, :CR4; R3, R4 = H, monovalent substituent) with concentration of II (R1, R2, X1, X2 = same as above) <0.5% (preferably <0.1%). White lights including phosphorescence may be emitted from the devices when elec. field is applied. The devices, showing low power consumption, are useful for organic EL displays or illumination devices (for LCD).

IT 769954-77-0  
 (electroluminescent layers; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)

RN 769954-77-0 HCAPLUS

CN 5H-Pyrido[4,3-b]indole, 5,5',5'',5'''-(2',5'-dimethyl[1,1':4',1''-terphenyl]-2,2'',4,4'''-tetrayl)tetrakis- (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
 ICS C09K011-06

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 73

ST org EL illumination display quantum efficiency durability;  
 carbazoylbiphenyl electroluminescent layer carbazole  
 minimized high luminance; white phosphorescence org  
 EL display illumination LCD

IT Electroluminescent devices  
 (displays; organic EL devices with high

- luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT Luminescent screens  
(electroluminescent; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT Electroluminescent devices  
(illuminations; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT Liquid crystal displays  
(organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 139092-78-7 604785-54-8 769954-74-7 769954-75-8  
(electroluminescent layers, electron transport layers; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 148044-07-9P  
(electroluminescent layers, electron transport layers; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 769954-76-9 769954-77-0  
(electroluminescent layers; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 58328-31-7P  
(electroluminescent layers; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 2085-33-8, Alq3  
(electron injection layers; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 4733-39-5, BCP  
(electron transport layers; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 123847-85-8,  $\alpha$ -NPD  
(hole transport layers; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 86-74-8, Carbazole 92-86-4, 4,4'-Dibromobiphenyl 626-44-8, 1,3,5-Triiodobenzene  
(in preparation of electroluminescent substances; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)
- IT 94928-86-6 344796-22-1 376367-93-0  
(phosphors; organic EL devices with high luminance, good quantum efficiency, and durability for displays and illumination devices)

L70 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:515606 HCAPLUS Full-text

DOCUMENT NUMBER: 141:79119

TITLE: Organic electroluminescent device material and organic electroluminescent device using same

INVENTOR(S): Iwakuma, Toshihiro; Tomita, Seiji; Arakane, Takashi

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

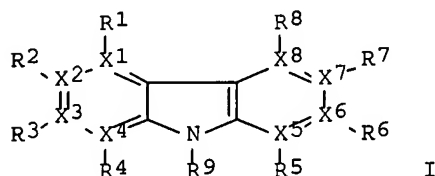
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

10/519,107

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004053019	A1	20040624	WO 2003-JP15874	20031211
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W: CN, IN, JP, KR, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
EP 1571193	A1	20050907	EP 2003-778817	20031211
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
CN 1723258	A	20060118	CN 2003-80105706	20031211
<--				
US 2006251918	A1	20061109	US 2005-538023	20050607
<--				
IN 2005CN01208	A	20070622	IN 2005-CN1208	20050610
<--				
PRIORITY APPLN. INFO.:			JP 2002-360134	A 20021212
<--				
			WO 2003-JP15874	W 20031211
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OTHER SOURCE(S): MARPAT 141:79119				
ED Entered STN: 27 Jun 2004				
GI				

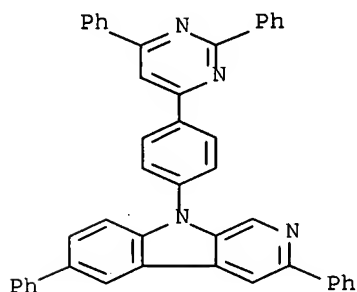


AB An organic electroluminescent (EL) device material composed of a compound having a specific N-containing condensed ring structure is disclosed. The organic electroluminescent device material is represented by I [X1-8 = C and N, at least one of X1-8 is nitrogen; R1-8 connected to carbon is substitution groups that may be linked to form a ring when the substitution groups are located next to each other, R1-8 connected to nitrogen represents lone pair electrons; R9 = substitution group]. An organic EL device wherein  $\geq 1$  organic thin-film layers are interposed between a cathode and an anode and at least 1 of the organic thin-film layers contains the organic EL device material is also disclosed. The organic EL device material enables to form a long-life organic EL device which uses phosphorescent emission and has a high luminous efficiency. The organic EL device is fabricated using this organic EL device material.

IT 710948-12-2  
(phosphorescent organic electroluminescent device material)

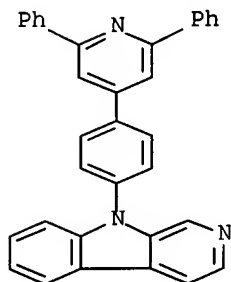
RN 710948-12-2 HCAPLUS

CN 9H-Pyrido[3,4-b]indole, 9-[4-(2,6-diphenyl-4-pyrimidinyl)phenyl]-3,6-diphenyl- (9CI) (CA INDEX NAME)

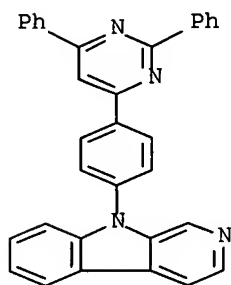


10/519,107

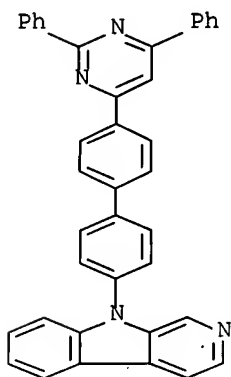
IT 710947-99-2P 710948-02-0P 710948-08-6P  
710948-09-7P 710948-10-0P 710948-11-1P  
(phosphorescent organic electroluminescent device  
material)  
RN 710947-99-2 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 9-[4-(2,6-diphenyl-4-pyridinyl)phenyl]- (9CI)  
(CA INDEX NAME)



RN 710948-02-0 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 9-[4-(2,6-diphenyl-4-pyrimidinyl)phenyl]-  
(9CI) (CA INDEX NAME)



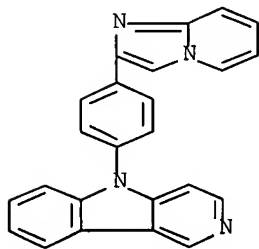
RN 710948-08-6 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 9-[4'-(2,6-diphenyl-4-pyrimidinyl) [1,1'-  
biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



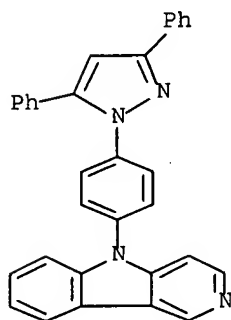
RN 710948-09-7 HCAPLUS

10/519,107

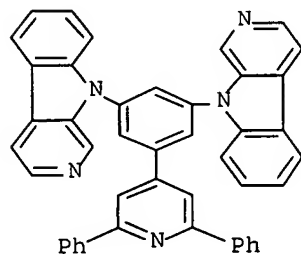
CN 5H-Pyrido[4,3-b]indole, 5-(4-imidazo[1,2-a]pyridin-2-ylphenyl)- (9CI)  
(CA INDEX NAME)



RN 710948-10-0 HCAPLUS  
CN 5H-Pyrido[4,3-b]indole, 5-[4-(3,5-diphenyl-1H-pyrazol-1-yl)phenyl]- (9CI) (CA INDEX NAME)

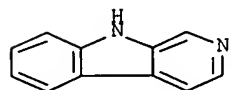


RN 710948-11-1 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 9,9'-[5-(2,6-diphenyl-4-pyridinyl)-1,3-phenylene]bis- (9CI) (CA INDEX NAME)

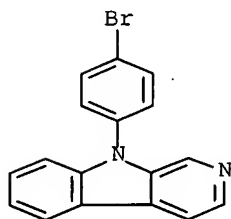


IT 244-63-3,  $\beta$ -Carboline 710948-04-2  
(phosphorescent organic electroluminescent device material)

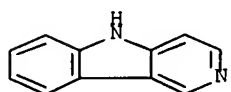
RN 244-63-3 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole (CA INDEX NAME)



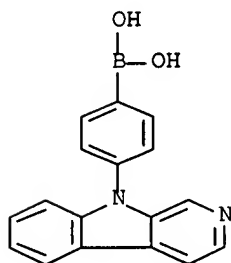
RN 710948-04-2 HCAPLUS  
 CN 9H-Pyrido[3,4-b]indole, 9-(4-bromophenyl)- (9CI) (CA INDEX NAME)



IT 244-69-9P, 5H-Pyrido[4,3-b]indole 710948-06-4P  
 (phosphorescent organic electroluminescent device  
 material)  
 RN 244-69-9 HCAPLUS  
 CN 5H-Pyrido[4,3-b]indole (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 710948-06-4 HCAPLUS  
 CN Boronic acid, [4-(9H-pyrido[3,4-b]indol-9-yl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
 ICS H05B033-14; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other  
 Related Properties)  
 Section cross-reference(s): 27, 28  
 ST org electroluminescent device nitrogen contg  
 condensed ring  
 IT Luminescent substances  
 (electroluminescent, host-guest; phosphorescent organic  
 electroluminescent device material)  
 IT Electroluminescent devices  
 Phosphorescence  
 (phosphorescent organic electroluminescent device  
 material)  
 IT 710948-12-2  
 (phosphorescent organic electroluminescent device  
 material)  
 IT 710947-99-2P 710948-02-0P 710948-08-6P

710948-09-7P 710948-10-0P 710948-11-1P  
(phosphorescent organic electroluminescent device material)

IT 98-86-2, Acetophenone, reactions 99-73-0, 2,4'-Dibromoacetophenone  
120-46-7, Dibenzoylmethane 244-63-3,  $\beta$ -Carboline  
504-24-5, 4-Aminopyridine 504-29-0, 2-Aminopyridine 583-55-1,  
2-Bromiodobenzene 589-87-7, 4-Bromiodobenzene 622-88-8,  
4-Bromophenylhydrazine hydrochloride 1122-91-4, 4-Bromobenzaldehyde  
1670-14-0, Benzamidine monohydrochloride 5419-55-6, Triisopropyl  
borate 16883-69-5, 1-Phenacylpyridinium bromide 56990-02-4,  
3,5-Dibromobenzaldehyde 710948-04-2  
(phosphorescent organic electroluminescent device material)  
IT 244-69-9P, 5H-Pyrido[4,3-b]indole 1498-81-3P 1774-66-9P  
34658-66-7P 58536-46-2P 58954-05-5P 86775-99-7P 607740-10-3P  
710948-06-4P  
(phosphorescent organic electroluminescent device material)

L70 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:355031 HCAPLUS Full-text

DOCUMENT NUMBER: 140:365418

TITLE: Material for organic electroluminescence  
element, and organic electroluminescence  
element using the same

INVENTOR(S): Tomita, Seiji; Iwakuma, Toshihiro; Arakane,  
Takashi; Yasuda, Hiroya; Hosokawa, Chishio

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: PCT Int. Appl., 62 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004035709	A1	20040429	WO 2003-JP13186	20031015

<--

W: CN, IN, JP, KR, US  
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,  
IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR  
EP 1555305 A1 20050720 EP 2003-754133 20031015

<--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK  
CN 1705731 A 20051207 CN 2003-80101772 20031015

<--

IN 2005CN00654 A 20070622 IN 2005-CN654 20050418

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US 2006141284 A1 20060629 US 2005-532001 20050810

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PRIORITY APPLN. INFO.: JP 2002-305375 A 20021021

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WO 2003-JP13186 W 20031015

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OTHER SOURCE(S): MARPAT 140:365418

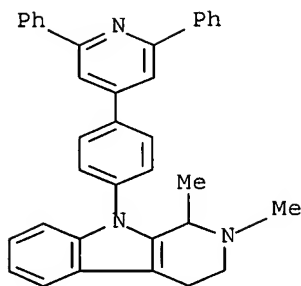
ED Entered STN: 30 Apr 2004

AB A material for an organic electroluminescence (EL) element comprising a compound having a specific N-containing condensed ring structure; and an organic EL element which comprises a cathode, an anode and, sandwiched between them,  $\geq 1$  of organic thin film layers, wherein at least 1 organic thin layer is an organic EL layer containing the above material for an organic EL element. The material for an organic EL element can provide an organic EL element being capable of achieving high luminous efficiency with a low elec. voltage.

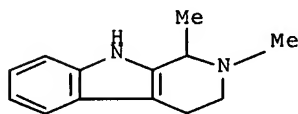
IT 682801-14-5P  
(host material for phosphorescent guest in; phosphorescent organic electroluminescent device)

RN 682801-14-5 HCAPLUS

CN 1H-Pyrido[3,4-b]indole, 9-[4-(2,6-diphenyl-4-pyridinyl)phenyl]-2,3,4,9-tetrahydro-1,2-dimethyl- (9CI) (CA INDEX NAME)



IT 486-91-9P  
 (in preparation of host material for phosphorescent guest;  
 phosphorescent organic electroluminescent device)  
 RN 486-91-9 HCAPLUS  
 CN 1H-Pyrido[3,4-b]indole, 2,3,4,9-tetrahydro-1,2-dimethyl- (7CI, 9CI)  
 (CA INDEX NAME)



IC ICM C09K011-06  
 ICS H05B033-14  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other  
 Related Properties)  
 Section cross-reference(s): 74  
 ST org electroluminescence device phosphorescence  
 host  
 IT Electroluminescent devices  
 Phosphorescent substances  
 (phosphorescent organic electroluminescent device)  
 IT 682801-06-5P 682801-07-6P 682801-08-7P 682801-09-8P  
 682801-11-2P 682801-12-3P 682801-13-4P 682801-14-5P  
 682801-15-6P  
 (host material for phosphorescent guest in; phosphorescent organic  
 electroluminescent device)  
 IT 98-86-2, Acetophenone, reactions 99-73-0, 2,4'-Dibromoacetophenone  
 120-46-7, Dibenzoylmethane 504-29-0, 2-Aminopyridine 622-88-8,  
 4-Bromophenylhydrazine monohydrochloride 626-39-1 942-01-8  
 1122-62-9, 2-Acetylpyridine 1670-14-0, Benzamidine monohydrochloride  
 16883-69-5, 1-Phenacylpyridinium bromide 22793-63-1 56990-02-4,  
 3,5-Dibromobenzaldehyde 128388-54-5 607740-10-3  
 (in preparation of host material for phosphorescent guest;  
 phosphorescent organic electroluminescent device)  
 IT 486-91-9P 1122-91-4P 1498-81-3P 2367-17-1P 16232-01-2P  
 34658-66-7P 58954-05-5P 607739-87-7P 682801-10-1P  
 (in preparation of host material for phosphorescent guest;  
 phosphorescent organic electroluminescent device)  
 IT 94928-86-6  
 (phosphorescent guest; phosphorescent organic  
 electroluminescent device)  
 IT 677275-72-8  
 (phosphorescent guest; rephosphorescent organic  
 electroluminescent device)  
 REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L70 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:423593 HCAPLUS Full-text  
 DOCUMENT NUMBER: 135:38787  
 TITLE: Organic electroluminescent

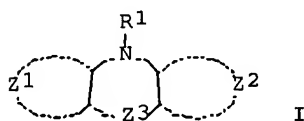


10/519,107

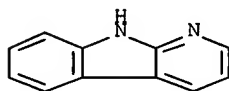
device  
 INVENTOR(S): Ueda, Noriko; Okubo, Yasushi; Kita, Hiroshi  
 PATENT ASSIGNEE(S): Konica Co., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001160488	A	20010612	JP 1999-341923	19991201
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PRIORITY APPLN. INFO.:			JP 1999-341923	19991201
			<--	

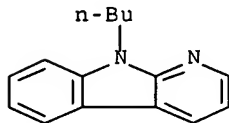
OTHER SOURCE(S): MARPAT 135:38787  
 ED Entered STN: 12 Jun 2001  
 GI



AB The invention relates to an organic electroluminescent device that provides high luminous intensity, comprising a compound represented by I [Z1 = aromatic heterocyclic ring; Z2 = linking or coupling group; Z3 = aromatic hydrocarbon and aromatic heterocyclic rings; and R1 = H or substituted group].  
 IT 244-76-8, 1H-Pyrido[2,3-b]indole 343780-33-6  
 (organic electroluminescent device)  
 RN 244-76-8 HCAPLUS  
 CN 9H-Pyrido[2,3-b]indole (CA INDEX NAME)



RN 343780-33-6 HCAPLUS  
 CN 9H-Pyrido[2,3-b]indole, 9-butyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
 ICS C09K011-06; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other  
 Related Properties)  
 ST org electroluminescent device heterocyclic compd  
 IT Electroluminescent devices  
 (organic electroluminescent device)  
 IT Heterocyclic compounds  
 (organic electroluminescent device)  
 IT 244-76-8, 1H-Pyrido[2,3-b]indole 343780-05-2 343780-07-4  
 343780-09-6 343780-11-0 343780-13-2 343780-14-3 343780-15-4

10/519,107

343780-16-5 343780-17-6 343780-18-7 343780-19-8 343780-20-1  
 343780-21-2 343780-22-3 343780-23-4 343780-24-5 343780-25-6  
 343780-26-7 343780-27-8 343780-28-9 343780-29-0 343780-30-3  
 343780-31-4 343780-32-5 343780-33-6 343780-34-7  
 343780-35-8 343780-36-9 343780-37-0 343780-38-1 343780-39-2  
 343780-40-5 343780-41-6  
 (organic electroluminescent device)

L70 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:756909 HCAPLUS Full-text

DOCUMENT NUMBER: 133:317531

TITLE: Nematodes for screening of compounds with  
potential pharmacological activityINVENTOR(S): Verwaerde, Philippe; Platteeuw, Christ; Cuvillier,  
Gwladys; Bogaert, Thierry

PATENT ASSIGNEE(S): Devgen N.V., Belg.

SOURCE: PCT Int. Appl., 137 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

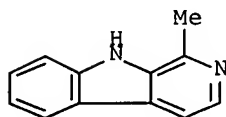
FAMILY ACC. NUM. COUNT: 5

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000063427	A2	20001026	WO 2000-IB575	20000414
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WO 2000063427	A3	20011206		
W:			AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW	
RW:			GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG	
CA 2365707	A1	20001026	CA 2000-2365707	20000414
			<--	
AU 200041376	A	20001102	AU 2000-41376	20000414
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AU 780574	B2	20050407		
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GB 2359358	A	20010822	GB 2001-11712	20000414
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GB 2359358	B	20020327		
GB 2359359	A	20010822	GB 2001-11713	20000414
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GB 2359627	B	20020123		
EP 1175506	A2	20020130	EP 2000-920972	20000414
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R:			AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO	
HU 200201142	A2	20020828	HU 2002-1142	20000414
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MX 2001PA10175	A	20020409	MX 2001-PA10175	20011009
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AU 200229186	A	20020523	AU 2002-29186	20020327

10/519,107

AU 781917 B2 20050623  
 US 2003149995 A1 20030807 US 2003-371101 20030221  
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 PRIORITY APPLN. INFO.: GB 1999-8670 A 19990415  
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 US 1999-129596P P 19990415  
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 GB 1999-12736 A 19990601  
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 AU 2000-41376 A3 20000414  
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 GB 2000-9358 A3 20000414  
 <--  
 US 2000-549872 A3 20000414  
 <--  
 WO 2000-IB575 W 20000414  
 <--  
 ED Entered STN: 27 Oct 2000  
 AB Screening methods are provided which use nematode worms, particularly but not exclusively  
 Caenorhabditis elegans , which are adapted to be performed in a high-throughput format.  
 IT 21655-84-5, Harmane hydrochloride  
 (nematodes for screening of compds. with potential pharmacol.  
 activity)  
 RN 21655-84-5 HCAPLUS  
 CN 9H-Pyrido[3,4-b]indole, 1-methyl-, monohydrochloride (8CI, 9CI) (CA  
 INDEX NAME)



● HCl

IC ICM C12Q001-02  
 ICS C12Q001-18; C12Q001-68  
 CC 1-1 (Pharmacology)  
 IT Fluorescent substances  
 Luminescent substances  
 (and precursors; nematodes for screening of compds. with potential  
 pharmacol. activity)  
 IT Apparatus  
 (fluorescence-activated nematode scanning and sorting  
 device; nematodes for screening of compds. with potential  
 pharmacol. activity)  
 IT Caenorhabditis briggsae  
 Caenorhabditis elegans  
 Color formers  
 Colored materials  
 Development, nonmammalian postembryonic  
 Digestive tract  
 Drug metabolism  
 Drug screening  
 Egg  
 Fluorometry  
 Genetic methods  
 Insecticides  
 Luminescence spectroscopy  
 Mutagenesis  
 Mutation  
 Nematode (Nematoda)  
 Pharmacodynamics  
 Spectrophotometry  
 (nematodes for screening of compds. with potential pharmacol.  
 activity)  
 IT 51-55-8, Atropine, biological studies 52-52-8, Cycloleucine

52-68-6, Metrifonate 57-41-0, Diphenylhydantoin 57-47-6,  
 Physostigmine 60-57-1, Dieldrin 83-79-4, Rotenone 101-31-5,  
 L-Hyoscyamine 124-87-8, Picrotoxin 303-49-1, Clomipramine  
 407-41-0, O-Phospho-L-serine 882-09-7, Clofibrilic acid 1225-56-5,  
 Nordoxepin 1477-50-5, Indole-2-carboxylic acid 1668-19-5, Doxepin  
 2062-78-4, Pimozide 3040-38-8 3054-07-7, DL-2-Aminosuberilic acid  
 4910-46-7, Spaglumilic acid 10540-29-1, Tamoxifen 19216-56-9,  
 Prazosin 20862-11-7, N-Desisopropylpropranolol 21655-84-5,  
 Harmane hydrochloride 23052-80-4, L-AP3 23052-81-5, L-AP4  
 24219-97-4, Mianserin 33978-72-2, YS-035 36112-95-5, Propranolol  
 glycol 54910-89-3, Fluoxetine 65277-42-1, Ketoconazole  
 68506-86-5, Vigabatrin 70288-86-7, Ivermectin 78594-87-3, ZAPA  
 79055-67-7 79055-68-8, D-AP5 82900-57-0, BP554 93379-54-5,  
 S-(-)-Atenolol 111872-98-1 112830-95-2, HU 210 119630-76-1  
 121050-04-2 133052-90-1, GF 109203X 140924-22-7 142326-59-8,  
 L-701324 155512-37-1 169505-93-5, RS 17053 170984-70-0  
 182485-36-5 185259-85-2, GR 46611 302897-18-3, GBLD 345  
 (nematodes for screening of compds. with potential pharmacol.  
 activity)

L70 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:682992 HCAPLUS Full-text

DOCUMENT NUMBER: 134:10928

TITLE: Quantum chemistry study on several  
 nitrogen-containing arene EL materials

AUTHOR(S): Liao, Xian-Wei; Su, Yu; Li, Shu-Wei; Lin, Zhan-Ru

CORPORATE SOURCE: Department of Chemistry, Sichuan Normal  
 University, Chengdu, 610066, Peop. Rep. China

SOURCE: Yuanzi Yu Fenzi Wuli Xuebao (2000),

17(3), 426-430

CODEN: YYFXEM; ISSN: 1000-0364

PUBLISHER: Yuanzi Yu Fenzi Wuli Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

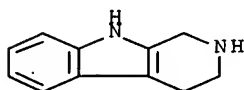
ED Entered STN: 29 Sep 2000

AB A theor. study on several N-containing arene electroluminescent (EL) materials by semi-empirical  
 PM3 is given. Conformation anal. was carried out for compound FL-7. The conformation with the  
 lowest energy is obtained. For all optimal configurations, there is no imaginary frequency in  
 vibrational anal. On this basis, the electronic spectra were calculated by CIS method. All  
 calculated results are basically consistent with exptl. values.

IT 16502-01-5D, aryl derivative  
 (quantum chemical study on electroluminescent)

RN 16502-01-5 HCAPLUS

CN 1H-Pyrido[3,4-b]indole, 2,3,4,9-tetrahydro- (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other  
 Related Properties)

Section cross-reference(s): 22, 76

ST quantum chem azo arene electroluminescent material

IT Molecular orbital  
 (frontier; quantum chemical study on several azo arene  
 electroluminescent materials)

IT Luminescence, electroluminescence  
 (of several azo arenes)

IT Binding energy  
 Formation enthalpy  
 Quantum chemistry  
 Total energy  
 UV and visible spectra  
 (quantum chemical study on several azo arene  
 electroluminescent materials)

IT 6537-68-4, [2,2'-Bi-1H-indole]-3,3'-diol  
 (conformation and quantum chemical study on electroluminescent  
 )

IT 16502-01-5D, aryl derivative 93273-16-6 308385-25-3  
 (quantum chemical study on electroluminescent)

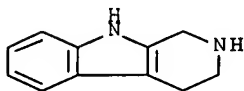
L70 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:467606 HCAPLUS Full-text  
 DOCUMENT NUMBER: 133:259166  
 TITLE: Chemical and photochemical oxidation of tetrahydrobetacarboline  
 AUTHOR(S): Carmona, C.; Ghanem, R.; Balon, M.; Munoz, M. A.; Guardado, P.  
 CORPORATE SOURCE: Facultad de Farmacia, Departamento de Quimica Fisica, Universidad de Sevilla, Seville, 41012, Spain  
 SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (2000), 135(2-3), 171-177  
 CODEN: JPPCEJ; ISSN: 1010-6030  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 12 Jul 2000

AB The photophysics and the mechanisms of the photochem. and chemical aromatization of 1,2,3,4-tetrahydro-7H-pyrido[3,4-b]indole (THBC) in 40% volume/volume methanol-water media have been investigated. The primary photophys. processes of THBC resemble those of indoles and related alkaloids. The photochem. oxidation has been carried out in the presence of atmospheric oxygen and light. The chemical oxidation has been studied using sodium peroxodisulfate (PDS) as the electrophilic agent. In both cases, strong acid media, i.e., sulfuric acid concns. higher than 0.5 mol dm<sup>-3</sup> are needed for the dehydroderivative (DH) to be formed. In the photochem. oxidation, the rate consts. for the disappearance of THBC increase linearly with the concentration of acid and the intensity of the exciting radiation. However, the formation of DH only depends on the acidity of the media. In the chemical oxidation a similar behavior is observed. In this case, the rate consts. for the disappearance of THBC increase linearly with both PDS and acid concns., and the appearance of DH solely varies with the acid concentration. A two step mechanism is proposed for these oxidation reactions. In the first step, excited or ground state THBC reacts with ground state oxygen or PDS, resp., to give an indolenine intermediate. This intermediate slowly rearranges, in a second acid catalyzed step to yield DH.

IT 16502-01-5  
 (photophysics and mechanisms of the photochem. and chemical aromatization of tetrahydropyridoindole)

RN 16502-01-5 HCAPLUS

CN 1H-Pyrido[3,4-b]indole, 2,3,4,9-tetrahydro- (CA INDEX NAME)



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 IT Luminescence  
 Phosphorescence  
 (in ethanol glass; photophysics and mechanisms of the photochem. and chemical aromatization of tetrahydropyridoindole)

IT 16502-01-5  
 (photophysics and mechanisms of the photochem. and chemical aromatization of tetrahydropyridoindole)

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L70 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:225622 HCAPLUS Full-text  
 DOCUMENT NUMBER: 132:342531  
 TITLE: Solid-matrix luminescence of heterocyclic aromatic amines in glucose glasses prepared from a glucose melt  
 AUTHOR(S): Mendonsa, Shaun D.; Hurtubise, Robert J.  
 CORPORATE SOURCE: Department of Chemistry, University of Wyoming, Laramie, WY, 82071, USA  
 SOURCE: Applied Spectroscopy (2000), 54(3), 456-459  
 CODEN: APSPA4; ISSN: 0003-7028  
 PUBLISHER: Society for Applied Spectroscopy  
 DOCUMENT TYPE: Journal

LANGUAGE: English

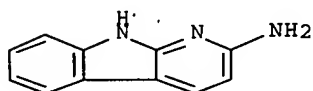
ED Entered STN: 07 Apr 2000

AB In this work, instead of using crystalline glucose to prepare the glasses, a glucose melt was used to obtain solid-matrix luminescence (SML). The glucose melt offered several advantages over crystalline glucose. In addition, the authors have introduced the use of a microwave oven to dry the glasses. Most of the SML data were acquired for 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP), but SML was obtained for several other heterocyclic aromatic amines. With the exception of PhIP, very little has been published about the luminescence properties of heterocyclic aromatic amines.

IT 26148-68-5, 2-Amino-9H-pyrido[2,3-b]indole 72254-58-1  
 , 3-Amino-1-methyl-5H-pyrido[4,3-b]indole acetate  
 (solid-matrix luminescence of heterocyclic aromatic amines  
 in glucose glasses prepared from glucose melt)

RN 26148-68-5 HCAPLUS

CN 9H-Pyrido[2,3-b]indol-2-amine (CA INDEX NAME)



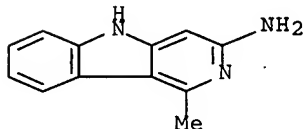
RN 72254-58-1 HCAPLUS

CN 5H-Pyrido[4,3-b]indol-3-amine, 1-methyl-, monoacetate (9CI) (CA INDEX  
 NAME)

CM 1

CRN 62450-07-1

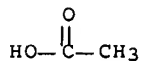
CMF C12 H11 N3



CM 2

CRN 64-19-7

CMF C2 H4 O2



CC 80-5 (Organic Analytical Chemistry)

Section cross-reference(s): 27, 73

ST heterocyclic arom amine solid matrix luminescence glucose  
 glass

IT Heterocyclic compounds  
 (amines; solid-matrix luminescence of heterocyclic aromatic  
 amines in glucose glasses prepared from glucose melt)

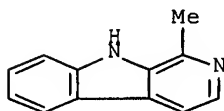
IT Amines, analysis  
 (aromatic, heterocyclic; solid-matrix luminescence of  
 heterocyclic aromatic amines in glucose glasses prepared from glucose  
 melt)

IT Microwave heating  
 (in preparation of glucose glasses from glucose melt solid-matrix  
 luminescence of heterocyclic aromatic amines)

IT Luminescence spectroscopy

(solid-matrix luminescence of heterocyclic aromatic amines  
in glucose glasses prepared from glucose melt)  
IT 26148-68-5, 2-Amino-9H-pyrido[2,3-b]indole 72254-58-1  
, 3-Amino-1-methyl-5H-pyrido[4,3-b]indole acetate 76180-96-6,  
2-Amino-3-methyl-3H-imidazo[4,5-f]quinoline 105650-23-5,  
2-Amino-1-methyl-6-phenylimidazo[4,5-b]pyridine  
(solid-matrix luminescence of heterocyclic aromatic amines  
in glucose glasses prepared from glucose melt)  
IT 50-99-7D, Glucose, glasses  
(solid-matrix luminescence of heterocyclic aromatic amines  
in glucose glasses prepared from glucose melt)  
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L70 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1999:660029 HCAPLUS Full-text  
DOCUMENT NUMBER: 132:28011  
TITLE: Luminescence of dispersed harmane in  
poly (acrylic acid)-poly (vinyl alcohol) polymer  
network  
AUTHOR(S): De Sousa, Jucimar M.; Dos Anjos, Paulo N. M.; De  
Azevedo, Walter M.; Diniz, Flamarion B.; De Sa,  
Gilberto F.; Marques, Alberto S.  
CORPORATE SOURCE: Dept de Quimica Fundamental-CCEN-UFPE, Recife,  
CEP: 50.670-901, Brazil  
SOURCE: Advances in Science and Technology (Faenza, Italy)  
(1999), 27(Innovative Light Emitting  
Materials), 291-298  
CODEN: ASETES  
PUBLISHER: Techna  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
ED Entered STN: 17 Oct 1999  
AB Harmane (1-methyl-9-H-pyrido-[3,4-b]-indol) was dispersed in poly(acrylic acid)-poly(vinyl alc.)  
polymer network (PAA-PVA) from aqueous solution and the equilibrium between monoprotonated and  
neutral species was monitored using absorption, emission spectra and life time measurement. In  
PAA-PVA this equilibrium was shifted to the monoprotonated species because of the free carboxylic  
groups, which makes the polymer network an abundant proton source. The emission decay  
measurements shows a considerable fluorescence enhancement of harmane when inside the polymer  
network and also a high intense non expected long-lived excited state with emission band centered  
at 490 nm and lifetime of 3.7 s at room temperature when the polymer are dry.  
IT 486-84-0, Harmane  
(luminescence of dispersed harmane in poly (acrylic  
acid)-poly (vinyl alc.) polymer network)  
RN 486-84-0 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 1-methyl- (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other  
Related Properties)  
Section cross-reference(s): 36, 38  
ST luminescence dispersed harmane polymer; acrylic acid vinyl  
alc polymer network matrix  
IT Fluorescence  
Phosphorescence  
Polymer networks  
Protonation  
UV and visible spectra  
(luminescence of dispersed harmane in poly (acrylic  
acid)-poly (vinyl alc.) polymer network)  
IT 9002-89-5, Polyvinyl alcohol 9003-01-4, Polyacrylic acid  
26299-60-5, Acrylic acid-vinyl alcohol copolymer  
(luminescence of dispersed harmane in poly (acrylic  
acid)-poly (vinyl alc.) polymer network)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L70 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN.

ACCESSION NUMBER: 1994:41753 HCAPLUS Full-text

DOCUMENT NUMBER: 120:41753

DOCUMENT NUMBER: 11011-100  
TITLE: Quenching of luminescence of  
tris(bipyridyl)ruthenium(2+) by the ferrocene  
derivatives of triiodide

AUTHOR(S): Duan, Chunying; Zhu, Longgen; You, Xiaozeng  
CORPORATE SOURCE: Coordinat. Chem. Inst., Nanjing Univ., Nanjing,  
210008, Peop. Rep. China

SOURCE: Chinese Science Bulletin (1993), 38(6), 462-6

CODEN: CSBUEF; ISSN: 1001-6538

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 22 Jan 1994

AB Luminescence quenching of Ru(bpy)<sub>3</sub><sup>2+</sup> (bpy=2,2'-bipyridine) by ferrocenium derivs. of triiodide depended of redox potential of the latter. The higher the redox potential of the ferrocenium derivative the larger was the quenching rate constant

IT 152043-37-3

(quenching of luminescence of  
tris(bipyridyl)ruthenium(2+) by, kinetics of)

RN 152043-37-3 HCAPLUS

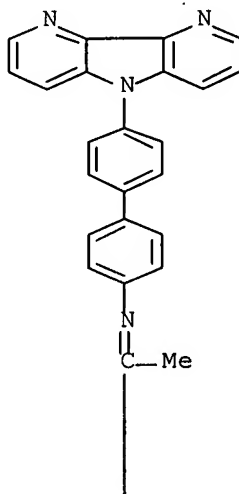
CN Ferrocenium, [1-[[4'-(5H-pyrrolo[3,2-b:4,5-b']dipyridin-5-yl)[1,1'-biphenyl]-4-yl]imino]ethyl]-, (triiodide) (9CI) (CA INDEX NAME)

CM 1

CRN · 152043-36-2

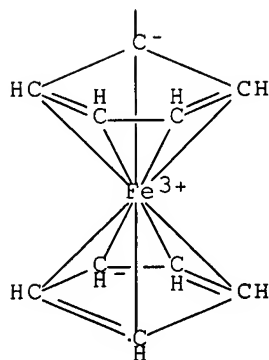
CMF C34 H26 Fe N4

CCI CCS



PAGE 1-A





CM 2

CRN 14900-04-0

CMF I3

I-I-I

- CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST ruthenium bipyridyl luminescence quenching ferrocenium triiodide; electron transfer luminescence quenching ruthenium bipyridyl
- IT Kinetics of electron exchange (in quenching of luminescence of tris(bipyridyl)ruthenium(2+) by ferrocene derivs. of triiodide)
- IT Luminescence quenching (of tris(bipyridyl)ruthenium(2+) by ferrocene derivs. of triiodide, kinetics of)
- IT Electron exchange and Charge transfer (photochem., in quenching of luminescence of tris(bipyridyl)ruthenium(2+) by ferrocene derivs. of triiodide)
- IT 152017-56-6 152017-58-8 152017-82-8 152017-84-0 152017-86-2 152043-37-3 (quenching of luminescence of tris(bipyridyl)ruthenium(2+) by, kinetics of)
- IT 15025-74-8 (quenching of luminescence of, by ferrocene derivs. of triiodide, kinetics of)

L70 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1985:69647 HCAPLUS Full-text

DOCUMENT NUMBER: 102:69647

TITLE: The luminescence properties of harmine, 7-methoxy-1-methyl-9-H-pyrido[3,4-b]indole

AUTHOR(S): Khalil, Gamal Eddin; Mayouf, Ahmed

CORPORATE SOURCE: Fac. Sci., Alfateh Univ., Tripoli, Libya

SOURCE: Canadian Journal of Spectroscopy (1984), 29(4), 104-8

CODEN: CJSPAI; ISSN: 0045-5105

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 24 Feb 1985

AB The absorption and emission spectra of harmine in different media has established the existence of the various mol. species of harmine. In addition to the neutral mol., spectral data are shown for the cation, anion and tautomer species. Spectroscopic comparison with harmine and  $\beta$ -carboline showed that all 3 compds. undergo an excited state proton transfer process.

IT 244-63-3 442-51-3 6519-18-2

73787-55-0 81685-32-7 94616-65-6

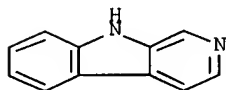
10/519,107

94616-66-7

(absorption and emission spectrum of)

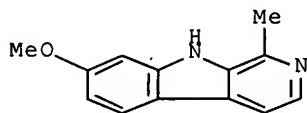
RN 244-63-3 HCAPLUS

CN 9H-Pyrido[3,4-b]indole (CA INDEX NAME)



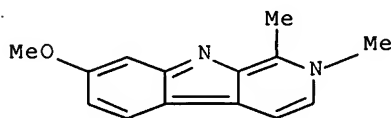
RN 442-51-3 HCAPLUS

CN 9H-Pyrido[3,4-b]indole, 7-methoxy-1-methyl- (CA INDEX NAME)



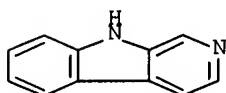
RN 6519-18-2 HCAPLUS

CN 2H-Pyrido[3,4-b]indole, 7-methoxy-1,2-dimethyl- (9CI) (CA INDEX NAME)



RN 73787-55-0 HCAPLUS

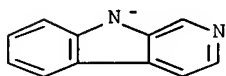
CN 9H-Pyrido[3,4-b]indole, conjugate monoacid (9CI) (CA INDEX NAME)



● H<sup>+</sup>

RN 81685-32-7 HCAPLUS

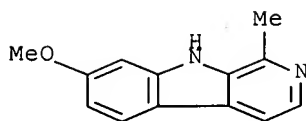
CN 9H-Pyrido[3,4-b]indole, ion(1-) (9CI) (CA INDEX NAME)



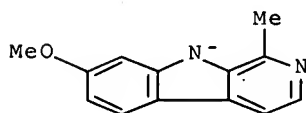
RN 94616-65-6 HCAPLUS

CN 9H-Pyrido[3,4-b]indole, 7-methoxy-1-methyl-, conjugate monoacid (9CI)  
(CA INDEX NAME)

10/519,107



RN 94616-66-7 HCAPLUS  
CN 9H-Pyrido[3,4-b]indole, 7-methoxy-1-methyl-, ion(1-) (9CI) (CA INDEX  
NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other  
Related Properties)  
Section cross-reference(s): 6, 22  
ST luminescence harmine cation anion tautomer; UV visible  
harmine  
IT Luminescence  
Ultraviolet and visible spectra  
(of harmine as neutral mol. and ion and tautomer)  
IT 244-63-3 442-51-3 6519-18-2  
73787-55-0 81685-32-7 94616-65-6  
94616-66-7  
(absorption and emission spectrum of)

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FILE 'HCAPLUS' ENTERED AT 09:16:59 ON 10 AUG 2007

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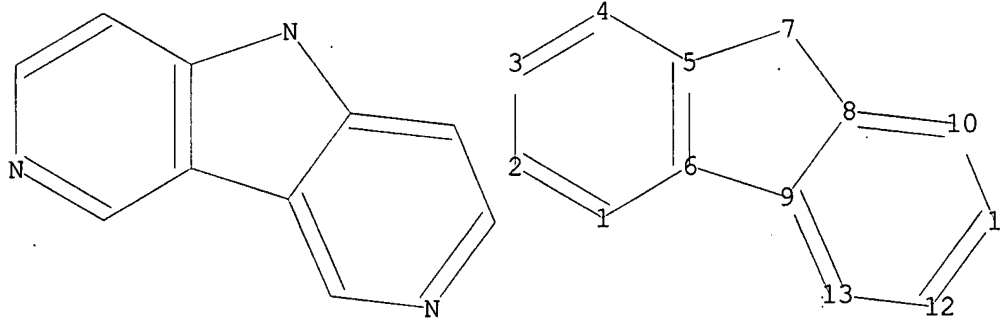
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        787577-30-4/BI OR 787577-32-6/BI OR 787577-34-8/BI OR
        787577-37-1/BI OR 787577-40-6/BI OR 787577-43-9/BI OR
        787577-45-1/BI OR 787577-47-3/BI OR 787577-49-5/BI OR
        787577-51-9/BI OR 787577-53-1/BI OR 787577-56-4/BI OR
        787577-59-7/BI OR 787577-61-1/BI OR 787577-64-4/BI OR
        787577-66-6/BI OR 787577-68-8/BI OR 787577-72-4/BI OR
        787577-74-6/BI OR 787577-77-9/BI OR 787577-80-4/BI OR
        787577-83-7/BI OR 787577-86-0/BI OR 787577-88-2/BI OR
        787577-90-6/BI OR 787577-93-9/BI OR 787577-95-1/BI OR
        787577-98-4/BI OR 787578-01-2/BI OR 787578-04-5/BI OR
        787578-07-8/BI OR 787578-09-0/BI OR 787578-11-4/BI OR
        787578-13-6/BI OR 787578-15-8/BI OR 787578-17-0/BI OR
        787578-19-2/BI OR 787578-21-6/BI OR 787578-23-8/BI OR
        787578-25-0/BI OR 787578-27-2/BI OR 787578-29-4/BI OR
        787578-31-8/BI OR 787578-33-0/BI OR 787578-37-4/BI OR
        787578-41-0/BI OR 787578-44-3/BI)
L3      STR
L4      48 SEA SSS SAM L3
L5      STR L3
L6      50 SEA SSS SAM L5
L7      SCR 2043 OR 1918
L8      50 SEA SSS SAM L5 NOT L7
L9      STR L5
L10     37 SEA SSS SAM L9 NOT L7
L11     STR
L12     50 SEA SSS SAM L11
L13     50 SEA SSS SAM L11 NOT L7
L14     STR L11
L15     2 SEA SSS SAM L14
L16     52 SEA ABB=ON  PLU=ON  1839.45/RID
L17     STR L14
L18     3 SEA SSS SAM L17
L19     42 SEA ABB=ON  PLU=ON  1839.26/RID
L20     STR L14
L21     5 SEA SSS SAM L20
L22     159 SEA ABB=ON  PLU=ON  1839.43/RID
L23     STR L20
L24     4 SEA SSS SAM L23
L25     38 SEA ABB=ON  PLU=ON  1839.526/RID
L26     STR L20
L27     50 SEA SSS SAM L26
L28     6320 SEA ABB=ON  PLU=ON  1839.27/RID
L29     STR L26
L30     50 SEA SSS SAM L29
L31     3407 SEA ABB=ON  PLU=ON  1839.34/RID
L32     STR L29
L33     50 SEA SSS SAM L32
L34     1310 SEA ABB=ON  PLU=ON  1839.37/RID
L35     STR L29
L36     50 SEA SSS SAM L35
L37     7237 SEA ABB=ON  PLU=ON  1839.106/RID
L38     STR L35
L39     50 SEA SSS SAM L38
L40     6320 SEA ABB=ON  PLU=ON  1839.27/RID
L41     STR L38
L42     50 SEA SSS SAM L41
L43     27723 SEA ABB=ON  PLU=ON  1839.23/RID
L44     STR L38
L45     40 SEA SSS SAM L44
L46     810 SEA ABB=ON  PLU=ON  1839.105/RID
L47     46998 SEA ABB=ON  PLU=ON  L22 OR L25 OR L28 OR L31 OR L34 OR L37

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10/519,107

OR L40 OR L43 OR L46  
L48 42 SEA ABB=ON PLU=ON L47 AND L2  
FILE 'HCAPLUS' ENTERED AT 10:02:05 ON 10 AUG 2007  
L49 1227 SEA ABB=ON PLU=ON L48  
L50 11329 SEA ABB=ON PLU=ON L47  
L51 QUE ABB=ON PLU=ON LUM!N? OR ELECTROLUM!N? OR ORGANOLUM!N?  
OR (ELECTRO OR ORGANO OR ORG#) (2A) LUM!N? OR LIGHT? (2A) (EMI  
T? OR EMISSION?) OR EL OR E(W)L OR L(W)E(W)D OR OLED OR  
LED  
L52 337 SEA ABB=ON PLU=ON L51 AND L50  
L53 1 SEA ABB=ON PLU=ON L52 AND L1  
L54 59 SEA ABB=ON PLU=ON L52 AND DEV/RL  
L55 14 SEA ABB=ON PLU=ON L54 AND (1840-2003)/PRY,AY,PY  
L56 215 SEA ABB=ON PLU=ON L52 AND (1840-2003)/PRY,AY,PY  
L57 12 SEA ABB=ON PLU=ON L56 AND PHOTOG?/SC,SX  
L58 16 SEA ABB=ON PLU=ON L55 OR L57  
L59 75 SEA ABB=ON PLU=ON L56 AND RACT/RL  
L60 70 SEA ABB=ON PLU=ON L59 AND PREP/RL  
L61 10 SEA ABB=ON PLU=ON L60 AND DEVIC?  
L62 16 SEA ABB=ON PLU=ON L56 AND DEVIC?  
L63 18 SEA ABB=ON PLU=ON L58 OR L61 OR L62  
L64 89 SEA ABB=ON PLU=ON L52 AND PHOTOG?/SC,SX  
L65 12 SEA ABB=ON PLU=ON L64 AND (1840-2003)/PRY,AY,PY  
L66 18 SEA ABB=ON PLU=ON L52 AND ELECTRIC?/SC,SX  
L67 91 SEA ABB=ON PLU=ON L52 AND OPTIC?/SC,SX  
L68 19 SEA ABB=ON PLU=ON L67 AND (1840-2003)/PRY,AY,PY  
L69 40 SEA ABB=ON PLU=ON L63 OR L65 OR L66 OR L68  
L70 23 SEA ABB=ON PLU=ON L69 AND (1840-2003)/PRY,AY,PY  
L71 1 SEA ABB=ON PLU=ON L70 AND

=>



ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 8-10 9-13 10-11 11-12 12-13

exact/norm bonds :

5-7 6-9 7-8

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-10 9-13 10-11 11-12 12-13

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR

/ Structure 1 in file .gra /

Structure attributes must be viewed using STN Express query preparation.

=> s l1 sss full

FULL SEARCH INITIATED 14:10:14 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 80097 TO ITERATE

100.0% PROCESSED 80097 ITERATIONS

145 ANSWERS

SEARCH TIME: 00.00.01

L2 145 SEA SSS FUL L1

=> s l2

L3 61 L2

=> s LUM!N? OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR ORG#) (2A)LUM!N? OR LIGHT?(2A) (EMIT? OR EMISSION?) OR EL OR E(W)L OR L(W)E(W)D OR OLED

335989 LUM!N?

74376 ELECTROLUM!N?

55 ORGANOLUM!N?

88454 ELECTRO

8 ELECTROS

88461 ELECTRO

(ELECTRO OR ELECTROS)

19480 ORGANO

3 ORGANOS  
 19483 ORGANO  
 (ORGANO OR ORGANOS)  
 1044262 ORG#  
 335989 LUM!N?  
 12784 (ELECTRO OR ORGANO OR ORG#) (2A) LUM!N?  
 1229529 LIGHT?  
 244850 EMIT?  
 574431 EMISSION?  
 84704 LIGHT? (2A) (EMIT? OR EMISSION?)  
 26442 EL  
 942 ELS  
 27356 EL  
 (EL OR ELS)  
 2064938 E  
 1599993 L  
 2037 E(W) L  
 1599993 L  
 2064938 E  
 2498247 D  
 29 L(W) E(W) D  
 4715 OLED  
 2379 OLEDs  
 5930 OLED  
 (OLED OR OLEDs)  
 L4 431513 LUM!N? OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO  
 OR ORG#) (2A) LUM!N? OR LIGHT? (2A) (EMIT? OR EMISSION?) OR EL OR  
 E(W) L OR L(W) E(W) D OR OLED

=> s 14 and 13

L5 34 L4 AND L3

=> s 15 and py<=2004

25056907 PY<=2004

L6 2 L5 AND PY<=2004

=> d 16 1-2 ibib abs

L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Material for organic electroluminescent device, organic electroluminescent device, illuminating device and display

Author/Inventor

Kato, Eisaku; Kita, Hiroshi; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Suzuri, Yoshiyuki; Ueda, Noriko

Patent Assignee/Corporate Source

Konica Minolta Holdings, Inc., Japan

Source

PCT Int. Appl., 90 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004095890	A1	20041104	WO 2004-JP5616	20040420

Patent Number (1)

WO 2004095890

Kind Code (1)

A1

Patent Publication Date (1)

20041104

Application Number (1)

WO 2004-JP5616

Application Date (1)

20040420

Priority Patent Number (1)

JP 2003-117886

Priority Kind Code (1)

A

Priority Patent Publication Date (1)

20030423

Abstract

A material for organic electroluminescent devices and a novel compound are disclosed which enable to obtain an organic electroluminescent device, an illuminating device and a display having high luminous efficiency and long life. This material for

organic electroluminescent devices is characterized by being a compound which has a mol. weight of  $\geq 450$  and is represented by the following general formula I [R1 = (substituted) alkyl, (substituted) cycloalkyl, (substituted) aryl, (substituted) heterocyclyl; Z1, Z2 = atomic group necessary for forming 5- to 7-membered N-containing aromatic heterocyclic ring structure; Y1 = divalent linking group, single bond].

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Organic electroluminescent device and display showing high luminous efficiency and long life

Author/Inventor

Suzuri, Yoshiyuki; Kita, Hiroshi; Kato, Eisaku; Oshiyama, Tomohiro; Fukuda, Mitsuhiko; Ueda, Noriko

Patent Assignee/Corporate Source

Konica Minolta Holdings, Inc., Japan

Source

PCT Int. Appl., 156 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004095889	A1	20041104	WO 2004-JP5603	20040420

Patent Number (1)

WO 2004095889

Kind Code (1)

A1

Patent Publication Date (1)

20041104

Application Number (1)

WO 2004-JP5603

Application Date (1)

20040420

Priority Patent Number (1)

JP 2003-117886

Priority Kind Code (1)

A

Priority Patent Publication Date (1)

20030423

Abstract

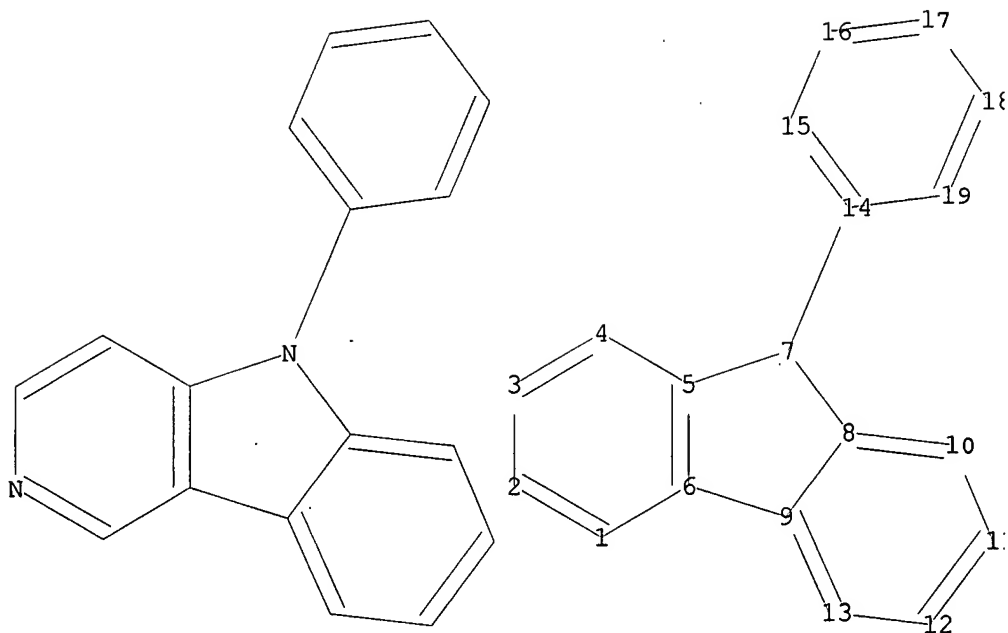
The title organic electroluminescent device is characterized by comprising composition layers between a pair of electrodes which composition layers include at least a phosphorescent light -emitting layer and at least one layer of which composition layers contains a compound represented by the following general formula I [Z1 = (substituted) aromatic heterocyclic ring; Z2 = (substituted) aromatic heterocyclic ring, (substituted) aromatic hydrocarbon ring; Z3 = divalent linking group, single bond; R = H, substituent].

=>

=>

=>





ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

chain bonds :

7-14

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 8-10 9-13 10-11 11-12 12-13 14-15 14-19 15-16 16-17 17-18 18-19

exact/norm bonds :

5-7 6-9 7-8 7-14

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-10 9-13 10-11 11-12 12-13 14-15 14-19 15-16 16-17 17-18 18-19

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom  
15:Atom 16:Atom 17:Atom 18:Atom 19:Atom

L7 STRUCTURE UPLOADED

=> s l7 sss full

FULL SEARCH INITIATED 14:52:13 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 9207 TO ITERATE

100.0% PROCESSED 9207 ITERATIONS

SEARCH TIME: 00.00.01

62 ANSWERS

L8 62 SEA SSS FUL L7

=> s l8

L9 40 L8

=> d his

(FILE 'HOME' ENTERED AT 14:09:41 ON 01 OCT 2007)

FILE 'REGISTRY' ENTERED AT 14:09:50 ON 01 OCT 2007  
L1 STRUCTURE UPLOADED  
L2 145 S L1 SSS FULL

FILE 'CAPLUS' ENTERED AT 14:10:24 ON 01 OCT 2007  
L3 61 S L2  
L4 431513 S LUM!N? OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO  
L5 34 S L4 AND L3  
L6 2 S L5 AND PY<=2004

FILE 'REGISTRY' ENTERED AT 14:51:45 ON 01 OCT 2007  
L7 STRUCTURE UPLOADED  
L8 62 S L7 SSS FULL

FILE 'CAPLUS' ENTERED AT 14:52:17 ON 01 OCT 2007  
L9 40 S L8

=> s 19 and 14  
L10 36 L9 AND L4

=> s 110 and py<=2004  
25056907 PY<=2004  
L11 3 L10 AND PY<=2004

=> d 111 1-3 ibib abs

L11 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

Title Organic electroluminescent device and display showing high luminous efficiency and long life  
Author/Inventor Suzuri, Yoshiyuki; Kita, Hiroshi; Kato, Eisaku; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Ueda, Noriko  
Patent Assignee/Corporate Source Konica Minolta Holdings, Inc., Japan  
Source  
Document Type PCT Int. Appl., 156 pp. CODEN: PIXXD2  
Patent  
Language Japanese  
Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004095889	A1	20041104	WO 2004-JP5603	20040420

Patent Number (1)  
WO 2004095889  
Kind Code (1)  
A1  
Patent Publication Date (1)  
20041104  
Application Number (1)  
WO 2004-JP5603  
Application Date (1)  
20040420  
Priority Patent Number (1)  
JP 2003-117886  
Priority Kind Code (1)  
A  
Priority Patent Publication Date (1)  
20030423

Abstract  
The title organic electroluminescent device is characterized by comprising composition layers between a pair of electrodes which composition layers include at least a phosphorescent light -emitting layer and at least one layer of which composition layers contains a compound represented by the following general formula I [Z1 = (substituted) aromatic heterocyclic ring; Z2 = (substituted) aromatic heterocyclic ring, (substituted) aromatic hydrocarbon ring; Z3 = divalent linking group, single bond; R = H, substituent].

L11 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

Title Organic electroluminescent devices with high luminance , good quantum efficiency, and durability and displays and illumination devices therefrom  
Author/Inventor Fukuda, Mitsuhiro; Suzurizato, Yoshiyuki; Kita, Hiroshi  
Patent Assignee/Corporate Source

Konica Minolta Holdings, Inc., Japan

Source

Jpn. Kokai Tokkyo Koho, 46 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004281296	A	20041007	JP 2003-73384	20030318

Patent Number (1)

JP 2004281296

Kind Code (1)

A

Patent Publication Date (1)

20041007

Application Number (1)

JP 2003-73384

Application Date (1)

20030318

Priority Patent Number (1)

JP 2003-73384

Priority Patent Publication Date (1)

20030318

Abstract

The electroluminescent (EL) devices have  $\geq 1$  layers containing I (A = linking group; R1, R2 = monovalent substituent; m = 1-6; X1 = :N, :CR3; X2 = :N, :CR4; R3, R4 = H, monovalent substituent) with concentration of II (R1, R2, X1, X2 = same as above)  $< 0.5\%$  (preferably  $< 0.1\%$ ). White lights including phosphorescence may be emitted from the devices when elec. field is applied. The devices, showing low power consumption, are useful for organic EL displays or illumination devices (for LCD).

L11 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Organic electroluminescent device material and organic electroluminescent device using same

Author/Inventor

Iwakuma, Toshihiro; Tomita, Seiji; Arakane, Takashi

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 50 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004053019	A1	20040624	WO 2003-JP15874	20031211

Patent Number (1)

WO 2004053019

Kind Code (1)

A1

Patent Publication Date (1)

20040624

Application Number (1)

WO 2003-JP15874

Application Date (1)

20031211

Priority Patent Number (1)

JP 2002-360134

Priority Kind Code (1)

A

Priority Patent Publication Date (1)

20021212

Abstract

An organic electroluminescent (EL) device material composed of a compound having a specific N-containing condensed ring structure is disclosed. The organic electroluminescent device material is represented by I [X1-8 = C and N, at least one of X1-8 is nitrogen; R1-8 connected to carbon is substitution groups that may be linked to form a ring when the substitution groups are located next to each other, R1-8 connected to nitrogen represents lone pair electrons; R9 = substitution group]. An organic EL device wherein  $\geq 1$  organic thin-film layers are interposed between a cathode and an anode and at least 1 of the organic thin-film layers contains the organic EL device material is also disclosed. The organic EL device material enables to form a long-life organic EL device which uses phosphorescent emission and has a high luminous efficiency. The organic EL device is fabricated using this

organic EL device material.

=> s l1 exa sam  
SAMPLE SEARCH INITIATED 15:00:42 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 2 TO ITERATE

100.0% PROCESSED 2 ITERATIONS 0 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 2 TO 124  
PROJECTED ANSWERS: 0 TO 0

L12 0 SEA EXA SAM L1

=> s l1 exa full  
FULL SEARCH INITIATED 15:00:48 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 40 TO ITERATE

100.0% PROCESSED 40 ITERATIONS 1 ANSWERS  
SEARCH TIME: 00.00.01

L13 1 SEA EXA FUL L1

=> d l13

L13 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN

=> d l13

L13 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN

=> s l13/prep  
6 L13  
4468331 PREP/RL  
L14 1 L13/PREP  
(L13 (L) PREP/RL)

=> d l14 ibib abs

L14 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Synthesis and thermal decomposition of 3-(2-pyridyl)-3H-1,2,3-triazolo[5,4-b]- and -[5,4,c]pyridines and their N-oxides

Author/Inventor

Kalinowski, Jerzy; Rykowski, Andrzej; Nantka-Namirski, Pawel

Patent Assignee/Corporate Source

Inst. Org. Chem., Pol. Acad. Sci., Warsaw, 01224, Pol.

Source

Polish Journal of Chemistry (1984), 58(1-2-3), 125-34 CODEN: PJCHDQ; ISSN: 0137-5083

Document Type

Journal

Language

English

Abstract

3-(2-Pyridyl)-3H-1,2,3-triazolo[5,4-b]pyridine (I, n = 0) upon heating in paraffin oil or polyphosphoric acid, does not give 1,8-diazacarbazole, but yields instead bis(2-pyridyl)amine and 2-(2-pyridylamino)-3- hydroxypyridine phosphate, resp.; the latter compound is also obtained by treating I (n = 1) with polyphosphoric acid. However, 3-(4-pyridyl)-3H-1,2,3-triazolo[5,4-c]pyridine is converted by polyphosphoric acid into 3,6-diazacarbazole II and 4-(4-pyridylamino)-3- hydroxypyridine.

=> s l13  
L15 6 L13

=> s l15 not l14  
L16 5 L15 NOT L14

=> d l16 1-5 ibib abs

L16 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Bipyridines. Part XX. Synthesis and properties of some pyrrolopyridine anhydronium bases

Author/Inventor

Kaczmarek, Lukasz

Patent Assignee/Corporate Source

Inst. Org. Chem., Pol. Acad. Sci., Warsaw, 01-224, Pol.

Source

Bulletin of the Polish Academy of Sciences, Chemistry (1987), 35(7-8), 269-77 CODEN: BPACEQ; ISSN: 0239-7285

Document Type

Journal

Language

English

Abstract

The title compds., e.g., I and II were prepared by quaternization of the corresponding pyrrolodipyridines and subsequent basification of the quaternary salts formed. The structure of the obtained compds. is discussed in the light of their spectral and physicochem. properties.

L16 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Antineoplastic activity of azacarbazoles. III. Synthesis and antitumor evaluation of selected 2-, 3-aza and diaza analogs of carbazole

Author/Inventor

Wieczorek, Jadwiga; Peczynska-Czoch, Wanda; Mordarski, Marian; Kaczmarek, Lukasz; Becalski, Adam; Nantka-Namirski, Pawel

Patent Assignee/Corporate Source

Inst. Immunol. Exp. Ther., Pol. Acad. Sci., Wroclaw, 53-114, Pol.

Source

Archivum Immunologiae et Therapiae Experimentalis (1986), 34(3), 323-6 CODEN: AITEAT; ISSN: 0004-069X

Document Type

Journal

Language

English

Abstract

The title compds. were prepared and tested for antitumor activity. Of the tested compds., only 2,7-diazacarbazole (I) [77200-36-3] and 3,6-diazacarbazole (II) [244-78-0] exhibited marked antineoplastic activity against sarcoma 180 cells. None of the compds. studied had an influence on mice bearing leukemias L 1210 and P 388. In the cytotoxicity test performed on KB cells, all the compds. were inactive. Structure-activity relations are described.

L16 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

A nitrogen-15 NMR study of some fused polyaza heterocyclic ring systems

Author/Inventor

Kaczmarek, L.; Nantka-Namirski, P.; Stefaniak, L.; Webb, G. A.; Davoust, D.; Basselier, J. J.

Patent Assignee/Corporate Source

Inst. Org. Chem., Pol. Acad. Sci., Warsaw, 01-224, Pol.

Source

Magnetic Resonance in Chemistry (1985), 23(10), 853-5 CODEN: MRCHEG; ISSN: 0749-1581

Document Type

Journal

Language

English

Abstract

<sup>15</sup>N NMR spectroscopy was used to distinguish between isomers and to characterize some series of novel fused polyaza heterocyclic ring systems. Support for the assignments was provided by means of some INDO/S-SOS shielding calcns. Previously observed shielding trends, as a function of nitrogen type, are reproduced in the present set of mols.

L16 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

3,6-Diazacarbazole

Author/Inventor

Koenigs, Ernst; Nantka, Paul-Leopold

Source

Berichte der Deutschen Chemischen Gesellschaft [Abteilung] B: Abhandlungen (1941), 74B, 215-17 CODEN: BDCBAD; ISSN: 0365-9488

Document Type

Journal

Language

Unavailable

Abstract

In attempts to prepare a dipyridopyrrole (I) analogous to harman, by decomposition of a pyridylpyridotriazole K. and N. obtained instead 3,6-diazacarbazole, C<sub>10</sub>H<sub>7</sub>N<sub>3</sub> (II), characterized by great inertness except to Me<sub>2</sub>SO<sub>4</sub>. II is obtained by heating 4'-pyridyl-3,4-pyridotriazole (III) in paraffin (or sirupy H<sub>3</sub>PO<sub>4</sub>) to 300°, washing with ether and recrystg. from H<sub>2</sub>O, flat needles, m. 328° (yield 60%), has an alkaline reaction in H<sub>2</sub>O; dinitrate, C<sub>10</sub>H<sub>7</sub>N<sub>3</sub>.2HNO<sub>3</sub>, colorless needles, m. 275°; picrate, yellow needles, m. 310°. II does not give the characteristic carbazole color reactions with concentrated H<sub>2</sub>SO<sub>4</sub>, HCl + pine splinter, HNO<sub>3</sub>, isatin or BzH, nor can it be nitrated, brominated, acetylated, nitrosated or amidated. When boiled with Me<sub>2</sub>SO<sub>4</sub> in alc. and then treated with BaCl<sub>2</sub>,

the N-methyl-hydrochloride, C<sub>11</sub>H<sub>10</sub>N<sub>3</sub>Cl, is obtained, m. 259°; the position of the Me group could not be determined. By a similar procedure using the 3'-amino derivative of III, 1-amino-3,6-diazacarbazole (IV), C<sub>10</sub>H<sub>8</sub>N<sub>4</sub>, is obtained as flat needles or leaves from H<sub>2</sub>O, m. 350°; nitrate, m. 350°; picrate, yellow needles, m. 283°; diazotization of IV and coupling with resorcinol or 2-naphthol give a red dye with blue luster.

L16 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Amino alcohols derived from carbazole. II

Author/Inventor

Ruberg, Leone; Small, Lyndon

Source

Journal of the American Chemical Society (1941), 63, 736-41 CODEN: JACSAT; ISSN: 0002-7863

Document Type

Journal

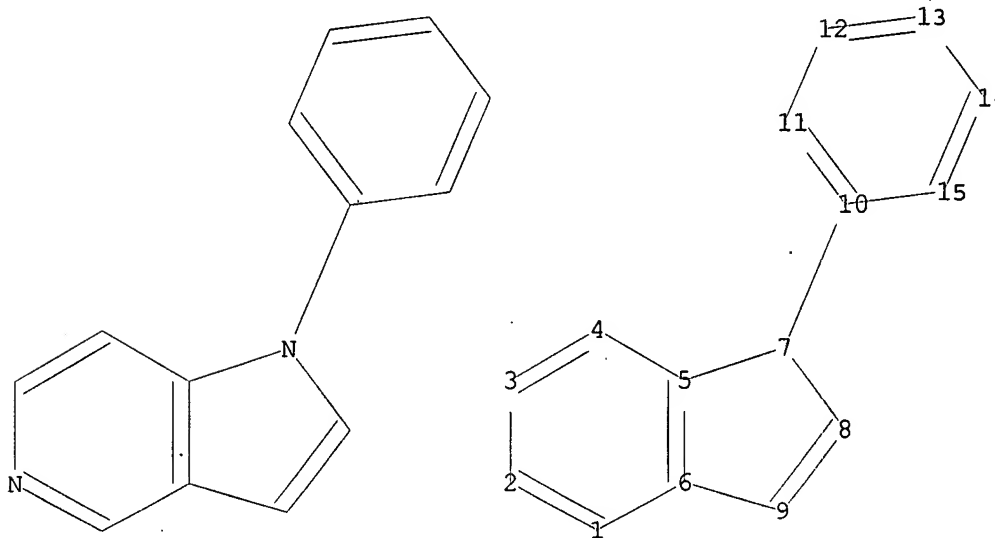
Language

Unavailable

Abstract

cf. C. A. 32, 6245.5. If the effect of position of substituents on physiol. action in the carbazole series is parallel to that observed in the procaine and sulfanilamide types, compds. carrying the amino alc. group in the 3-position, para to the carbazole N atom, might be more active than the corresponding 2-derivs. The amino ketones (as HCl salts) were prepared by refluxing for 3-10 h. in a N atmospheric a mixture of 3-acetyl-9-methylcarbazole (1 mol.), 1.05 mol. of the amine-HCl and 1.75 mol. of (HCHO)x in absolute EtOH (using 10-20 g. ketone in 50-80 cc. EtOH); condensation proceeds more slowly in EtOH than in iso-AmOH but it is accompanied by fewer side reactions (possibly due to the instability of the amino ketones at the higher temperature); yields are based on the quantity of original ketone not recovered. The following derivs. of 3-(3-R-1-oxopropyl)-9-methylcarbazole- HCl were prepared where R is: dimethylamino, m. 193.5-4.5°, 61% (the free base m. 72.5-3° and appears to undergo slight decomposition with recrystn.); tetrahydroisoquinolino, m. 201-2°, 78% (picrate, yellow, m. 177.5-8.5°); diethylamino, m. 167-8.5°, 59-83% (5-8 h. of reaction) (picrate, yellow, m. 143-3.5°). Catalytic reduction with PtO<sub>2</sub> in MeOH yields 3-(3-R-1-hydroxypropyl)-9-methylcarbazoles, in which R is: dimethylamino, m. 122.5-3°, 65% yield on reduction for 2 days (picrate, amber, m. 157.5-8.5° (decomposition)); tetrahydroisoquinolino, amorphous, but yields a crystalline HCl salt, m. 187° (decomposition); diethylamino, an oil, whose HCl salt m. 132-4°; on attempting the conversion of the alc. to the HCl salt, a mol. of H<sub>2</sub>O appears to be lost, giving the compound C<sub>20</sub>H<sub>25</sub>N<sub>2</sub>, m. 189-90.5°. Repetition of the work of Sherlin and Berlin (C. A. 32, 544.4) on the action of AlCl<sub>3</sub> on 9-acetylcarbazole and ClCH<sub>2</sub>COCl in CS<sub>2</sub> gives 94% of 2-chloroacetyl-9-acetylcarbazole (I), which they designated as the 3-chloroacetyl derivative; hydrolysis of 20 g. with 720 cc. 20% H<sub>2</sub>SO<sub>4</sub> in 2400 cc. EtOH by refluxing 2-2.5 h. gives an almost quant. yield of 2-chloroacetylcarbazole(II), fusion of which with KOH and esterification give Et carbazole-2-carboxylate, thus establishing the structure of I. Me<sub>2</sub>SO<sub>4</sub> and II in Me<sub>2</sub>CO with aqueous KOH give a small and variable yield of 2-chloroacetyl-9-methylcarbazole, yellow, m. 173.5-5°. II (10 g.) and 12.7 cc. Et<sub>2</sub>NH in 6.5 cc. C<sub>6</sub>H<sub>6</sub>, heated in a boiling water bath for 8-9 h., give 67% of 2-(2-diethylamino-1-oxoethyl)carbazole (III), m. 134-6° (decomposition) after sublimation at 130-5° in vacuo (155.5-6.5° in an evacuated tube); HCl salt, with 0.5 mol. H<sub>2</sub>O(?), m. 190.5-3° (decomposition); picrate, yellow, m. 164-5°. Catalytic reduction of III with PtO<sub>2</sub> gives 92% (33% from II) of 2-(2-diethylamino-1-hydroxyethyl)carbazole (IV), m. 151-2°; in another experiment the yield was lower and the product difficult to purify; III is more conveniently reduced by Na-Hg in EtOH containing HCl, the yield from II being 37%; HCl salt, m. 182.5-4°; styphnate, m. 179-80° (decomposition). Heating IV in 6 parts by weight of 30% H<sub>2</sub>O<sub>2</sub> for 30 min. on the water bath gives an almost quant. yield of the amine oxide, m. 181° (decomposition).

=>  
=>



ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

chain bonds :

7-10

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 10-11 10-15 11-12 12-13 13-14 14-15

exact/norm bonds :

5-7 6-9 7-8 7-10 8-9

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 10-11 10-15 11-12 12-13 13-14 14-15

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom  
15:Atom

L17 STRUCTURE UPLOADED

=> s l17 sss full

FULL SEARCH INITIATED 15:24:28 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 55240 TO ITERATE

100.0% PROCESSED 55240 ITERATIONS

306 ANSWERS

SEARCH TIME: 00.00.01

L18 306 SEA SSS FUL L17

=> s l18

L19 97 L18

=> s l19 and l4

L20 52 L19 AND L4

=> s l20 and py<=2004

25056907 PY<=2004

L21 5 L20 AND PY<=2004

=> d l21 ibib abs

L21 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Material for organic electroluminescent device, organic electroluminescent device, illuminating device and display

Author/Inventor

Kato, Eisaku; Kita, Hiroshi; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Suzuri, Yoshiyuki; Ueda, Noriko

Patent Assignee/Corporate Source

Konica Minolta Holdings, Inc., Japan

Source

PCT Int. Appl., 90 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004095890	A1	20041104	WO 2004-JP5616	20040420

Patent Number (1)

WO 2004095890

Kind Code (1)

A1

Patent Publication Date (1)

20041104

Application Number (1)

WO 2004-JP5616

Application Date (1)

20040420

Priority Patent Number (1)

JP 2003-117886

Priority Kind Code (1)

A

Priority Patent Publication Date (1)

20030423

Abstract

A material for organic electroluminescent devices and a novel compound are disclosed which enable to obtain an organic electroluminescent device, an illuminating device and a display having high luminous efficiency and long life. This material for organic electroluminescent devices is characterized by being a compound which has a mol. weight of  $\geq 450$  and is represented by the following general formula I [R1 = (substituted) alkyl, (substituted) cycloalkyl, (substituted) aryl, (substituted) heterocyclyl; Z1, Z2 = atomic group necessary for forming 5- to 7-membered N-containing aromatic heterocyclic ring structure; Y1 = divalent linking group, single bond].

=> d 121 2-5 ibib abs

L21 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Organic electroluminescent device and display showing high luminous efficiency and long life

Author/Inventor

Suzuri, Yoshiyuki; Kita, Hiroshi; Kato, Eisaku; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Ueda, Noriko

Patent Assignee/Corporate Source

Konica Minolta Holdings, Inc., Japan

Source

PCT Int. Appl., 156 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004095889	A1	20041104	WO 2004-JP5603	20040420

Patent Number (1)

WO 2004095889

Kind Code (1)

A1

Patent Publication Date (1)

20041104

Application Number (1)

WO 2004-JP5603

Application Date (1)

20040420

Priority Patent Number (1)

JP 2003-117886

Priority Kind Code (1)

A

Priority Patent Publication Date (1)

20030423

Abstract

The title organic electroluminescent device is characterized by comprising composition layers between a pair of electrodes which composition layers include at least a phosphorescent light-emitting layer and at least one layer of which composition layers contains a compound represented by the following general formula I [Z1 = (substituted) aromatic heterocyclic ring; Z2 = (substituted) aromatic heterocyclic ring, (substituted) aromatic hydrocarbon ring; Z3 = divalent linking group, single bond; R = H, substituent].

L21 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Organic electroluminescent devices with high luminance, good quantum efficiency, and durability and displays and illumination devices therefrom

Author/Inventor

Fukuda, Mitsuhiro; Suzurizato, Yoshiyuki; Kita, Hiroshi

Patent Assignee/Corporate Source

Konica Minolta Holdings, Inc., Japan

Source

Jpn. Kokai Tokkyo Koho, 46 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese



Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004281296	A	20041007	JP 2003-73384	20030318

Patent Number (1)

JP 2004281296

Kind Code (1)

A

Patent Publication Date (1)

20041007

Application Number (1)

JP 2003-73384

Application Date (1)

20030318

Priority Patent Number (1)

JP 2003-73384

Priority Patent Publication Date (1)

20030318

Abstract

The electroluminescent (EL) devices have  $\geq 1$  layers containing I (A = linking group; R1, R2 = monovalent substituent; m = 1-6; X1 = :N, :CR3; X2 = :N, :CR4; R3, R4 = H, monovalent substituent) with concentration of II (R1, R2, X1, X2 = same as above) <0.5% (preferably <0.1%). White lights including phosphorescence may be emitted from the devices when elec. field is applied. The devices, showing low power consumption, are useful for organic EL displays or illumination devices (for LCD).

L21 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Organic electroluminescent device material and organic electroluminescent device using same

Author/Inventor

Iwakuma, Toshihiro; Tomita, Seiji; Arakane, Takashi

Patent Assignee/Corporate Source

Idemitsu Kosan Co., Ltd., Japan

Source

PCT Int. Appl., 50 pp. CODEN: PIXXD2

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004053019	A1	20040624	WO 2003-JP15874	20031211

Patent Number (1)

WO 2004053019

Kind Code (1)

A1

Patent Publication Date (1)

20040624

Application Number (1)

WO 2003-JP15874

Application Date (1)

20031211

Priority Patent Number (1)

JP 2002-360134

Priority Kind Code (1)

A

Priority Patent Publication Date (1)

20021212

Abstract

An organic electroluminescent (EL) device material composed of a compound having a specific N-containing condensed ring structure is disclosed. The organic electroluminescent device material is represented by I [X1-8 = C and N, at least one of X1-8 is nitrogen; R1-8 connected to carbon is substitution groups that may be linked to form a ring when the substitution groups are located next to each other, R1-8 connected to nitrogen represents lone pair electrons; R9 = substitution group]. An organic EL device wherein  $\geq 1$  organic thin-film layers are interposed between a cathode and an anode and at least 1 of the organic thin-film layers contains the organic EL device material is also disclosed. The organic EL device material enables to form a long-life organic EL device which uses phosphorescent emission and has a high luminous efficiency. The organic EL device is fabricated using this organic EL device material.

L21 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Reversible inhibitors of the gastric (H<sup>+</sup>/K<sup>+</sup>)-ATPase. 1. 1-Aryl-4-methylpyrrolo[3,2-c]quinolines as conformationally restrained analogs of 4-(arylamino)quinolines

Author/Inventor

Brown, Thomas H.; Ife, Robert J.; Keeling, David J.; Laing, Shiona M.; Leach, Colin A.; Parsons, Michael E.; Price, Carolyn A.; Reavill, David R.; Wiggall, Kenneth J.

Patent Assignee/Corporate Source

Dep. Med. Chem., Smith Kline and French Res. Ltd., Welwyn/Herts., AL6 9AR, UK

Source

Journal of Medicinal Chemistry (1990 ), 33(2), 527-33 CODEN: JMCMAR; ISSN: 0022-2623

Document Type

Journal

Language

English

Abstract

I, previously described as an antiulcer compound, is an inhibitor of the gastric (H<sup>+</sup>/K<sup>+</sup>)-ATPase. It is postulated that 1-arylpyrrolo[3,2-c]quinolines (II, R = e.g., H, OMe, OH and R<sub>1</sub> = H, 2-Me, 2-OMe) act as conformationally restrained analogs of I. A series of derivs. of II were prepared and shown to be potent inhibitors of the target enzyme in vitro. Substitution in the ortho position of the aryl ring is important for activity. Unsatn. in the 5-membered ring makes little difference, but introduction of heteroatoms into the same ring markedly reduces activity. In more detailed kinetic expts., one of the II derivs. (R = OMe, and R<sub>1</sub> = 2-Me) and I both show reversible, K<sup>+</sup>-competitive binding to the enzyme, with submicromolar K<sub>i</sub> values. The compds. appear to act at the luminal face of the enzyme, and to require protonation for activity. Several compds. in the series are shown to be potent inhibitors of pentagastrin-stimulated acid secretion in the rat.

=>

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Connection closed by remote host

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Exiting the script...

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

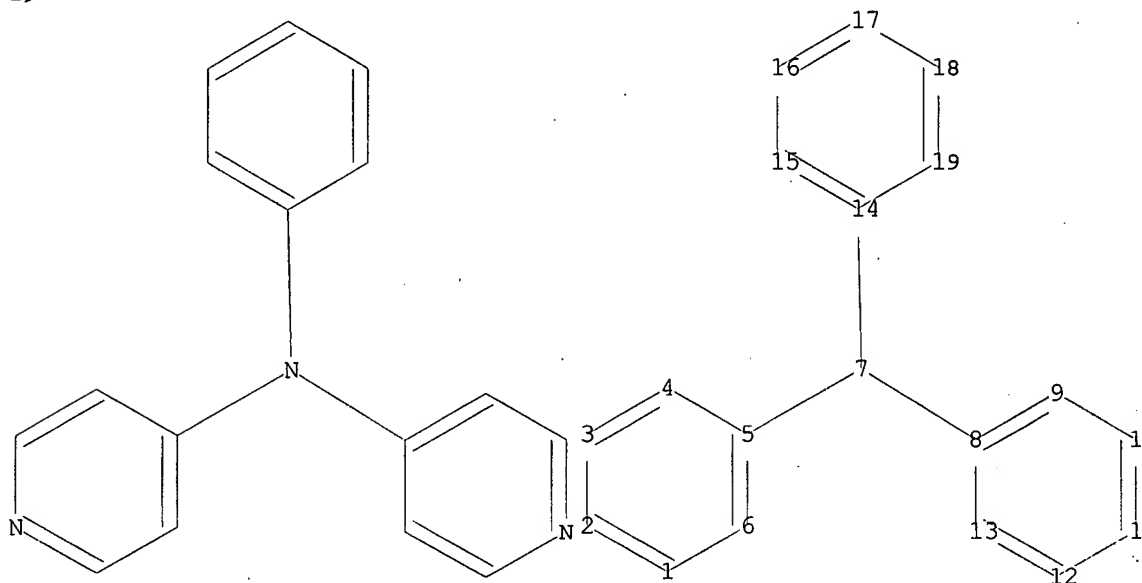
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PASSWORD:

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\*\*\*\*\* Welcome to STN International \*\*\*\*\*

=>



chain nodes :

7

ring nodes :

1 2 3 4 5 6 8 9 10 11 12 13 14 15 16 17 18 19

chain bonds :

5-7 7-8 7-14

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-13 9-10 10-11 11-12 12-13 14-15 14-19 15-16 16-17 17-18 18-19

exact/norm bonds :

5-7 7-8 7-14

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-13 9-10 10-11 11-12 12-13 14-15 14-19 15-16 16-17 17-18 18-19

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom  
15:Atom 16:Atom 17:Atom 18:Atom 19:Atom

L1 STRUCTURE UPLOADED

=> s 11 sss full

FULL SEARCH INITIATED 16:33:11 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 3539 TO ITERATE

100.0% PROCESSED 3539 ITERATIONS

23 ANSWERS

SEARCH TIME: 00.00.01

L2 23 SEA SSS FUL L1

=> s 12

L3 20 L2

=> s LUM!N? OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR ORG#) (2A)LUM!N? OR  
LIGHT?(2A) (EMIT? OR EMISSION?) OR EL OR E(W)L OR L(W)E(W)D OR OLED

335989 LUM!N?

74376 ELECTROLUM!N?

55 ORGANOLUM!N?

88454 ELECTRO

8 ELECTROS

88461 ELECTRO

(ELECTRO OR ELECTROS)

19480 ORGANO

3 ORGANOS

19483 ORGANO

(ORGANO OR ORGANOS)

1044262 ORG#

335989 LUM!N?

12784 (ELECTRO OR ORGANO OR ORG#) (2A)LUM!N?

1229529 LIGHT?

244850 EMIT?

574431 EMISSION?

84704 LIGHT?(2A) (EMIT? OR EMISSION?)

26442 EL

942 ELS

27356 EL

(EL OR ELS)

2064938 E

1599993 L  
2037 E(W)L  
1599993 L  
2064938 E  
2498247 D  
29 L(W)E(W)D  
4715 OLED  
2379 OLEDs  
5930 OLED

(OLED OR OLEDs)

L4 431513 LUM!N? OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO  
OR ORG#) (2A) LUM!N? OR LIGHT? (2A) (EMIT? OR EMISSION?) OR EL OR  
E(W)L OR L(W)E(W)D OR OLED

=> s 13 and 14

L5 12 L3 AND L4

=> s 15 and py<=2004

25056907 PY<=2004

L6 3 L5 AND PY<=2004

=> d 16 ibib abs

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Monoamine as additive for organic electroluminescent device emitting high-intensity yellow to red light

Author/Inventor

Tanaka, Hiroaki; Kanno, Masaki; Yagi, Tamao; Toba, Yasumasa

Patent Assignee/Corporate Source

Toyo Ink Mfg. Co., Ltd., Japan

Source

Jpn. Kokai Tokkyo Koho, 29 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003201472	A	20030718	JP 2002-305258	20021021

Patent Number (1)

JP 2003201472

Kind Code (1)

A

Patent Publication Date (1)

20030718

Application Number (1)

JP 2002-305258

Application Date (1)

20021021

Priority Patent Number (1)

JP 2001-328710

Priority Kind Code (1)

A

Priority Patent Publication Date (1)

20011026

Abstract

Claimed is the monoamine Ar1NR1R2 [Ar1 = (substituted) perylenyl; R1-2 = (substituted) monovalent aliphatic- or aromatic hydrocarbyl, (substituted) monovalent aliphatic- or aromatic heterocycle; at least one of R1-2 = -Ar2X1Ar3; Ar2 = (substituted) divalent aromatic- hydrocarbyl or heterocycle; Ar3 = (substituted) monovalent aromatic- hydrocarbyl or heterocycle; X1 = direct bond, O, S, :C(R3)R4, :Si(R5)R6; R3-6 = H, (substituted) monovalent aliphatic or aromatic hydrocarbyl; Ar1 and R1, Ar1 and R2, and/or R1 and R2 may form a ring]. An organic electroluminescent device comprises the amine in an organic layer, preferably in a light-emitting layer. The device shows long service life.

=> d 16 2-3 ibib abs

L6 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Composite for organic electroluminescent device comprising perylene and diketopyrrolopyrrole derivatives

Author/Inventor

Onikubo, Toshikazu; Oryu, Yoshitake; Amano, Masaomi; Maki, Shinichiro; Yanai, Hiroyuki; Yagi, Tadao

Patent Assignee/Corporate Source

Toyo Ink Mfg. Co., Ltd., Japan

## Source

PCT Int. Appl., 75 pp. CODEN: PIXXD2

## Document Type

Patent

## Language

Japanese

## Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003048268	A1	20030612	WO 2002-JP12592	20021202

## Patent Number (1)

WO 2003048268

## Kind Code (1)

A1

## Patent Publication Date (1)

20030612

## Application Number (1)

WO 2002-JP12592

## Application Date (1)

20021202

## Priority Patent Number (1)

JP 2001-368036

## Priority Kind Code (1)

A

## Priority Patent Publication Date (1)

20011203

## Abstract

The invention refers to an organic electroluminescent device comprising a perylene derivative and a diketopyrrolopyrrole derivative. The device may also contain a compound having a fluorescence peak > 550 nm, and 5% of another compound relative to the first having a fluorescence spectrum 500 - 800 nm wherein the region > 600 nm is < 20% of the entire spectrum.

## L6 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

## Title

Organic electroluminescent element, material and display

## Author/Inventor

Yamada, Taketoshi; Ueda, Noriko; Matsuura, Mitsunobu; Kita, Hiroshi

## Patent Assignee/Corporate Source

Konica Co., Japan

## Source

Jpn. Kokai Tokkyo Koho, 45 pp. CODEN: JKXXAF

## Document Type

Patent

## Language

Japanese

## Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002175883	A	20020621	JP 2001-231650	20010731

## Patent Number (1)

JP 2002175883

## Kind Code (1)

A

## Patent Publication Date (1)

20020621

## Application Number (1)

JP 2001-231650

## Application Date (1)

20010731

## Priority Patent Number (1)

JP 2000-285050

## Priority Kind Code (1)

A

## Priority Patent Publication Date (1)

20000920

## Abstract

The invention refers to an organic electroluminescent device comprising the compound I [Ar1-3 = (un)substituted aromatic hydrocarbon(heterocyclyl); R1 = alkyl, halo, alkoxy; n1 = 0 - 4].

=&gt; d`his

(FILE 'HOME' ENTERED AT 16:32:38 ON 01 OCT 2007)

FILE 'REGISTRY' ENTERED AT 16:32:49 ON 01 OCT 2007

L1 STRUCTURE UPLOADED

L2 23 S L1 SSS FULL

FILE 'CAPLUS' ENTERED AT 16:33:20 ON 01 OCT 2007

L3 20 S L2

L4 431513 S LUM!N? OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO

L5 12 S L3 AND L4

L6 3 S L5 AND PY<=2004

=> s l5 not l6

L7 9 L5 NOT L6

=> d l7 6-9 ibib abs

L7 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Electroluminescent materials containing perylenylamines and styryl compounds, and red-emitting organic electroluminescent devices using them

Author/Inventor

Suda, Yasumasa; Toba, Yasumasa; Tanaka, Hiroaki; Amano, Saneomi

Patent Assignee/Corporate Source

Toyo Ink Mfg. Co., Ltd., Japan

Source

Jpn. Kokai Tokkyo Koho, 72 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005068377	A	20050317	JP 2003-303572	20030827

Patent Number (1)

JP 2005068377

Kind Code (1)

A

Patent Publication Date (1)

20050317

Application Number (1)

JP 2003-303572

Application Date (1)

20030827

Priority Patent Number (1)

JP 2003-303572

Priority Patent Publication Date (1)

20030827

Abstract

The materials contain Ar1NR1R2 [Ar1 = (un)substituted perylenyl; R1, R2 = aromatic hydrocarbyl, aromatic heterocyclyl] and styryl compds. I or II (R3-R44 = aliphatic hydrocarbyl, aromatic hydrocarbyl, aliphatic heterocyclyl, aromatic heterocyclyl; X1-X3 = aromatic heterocyclylene; R3R19, R4R21, R5R28, R6R30, R7R31, R8R33, R9R42, and R10R44 may form ring). Thus, an organic electroluminescent device having an emitter layer containing 3-(diphenylamino)perylene, and I (R3 = R4 = R5 = R6 = 1-naphthyl, X1 = 9,10-dicyano-2,6-anthracenediyl, other = H) showed high luminescence intensity and color purity at low operation voltage, and lengthened service life.

L7 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Electroluminescent materials containing perylenylamines and azafluoranthenes, and red-emitting organic electroluminescent devices using them

Author/Inventor

Toba, Yasumasa; Tanaka, Hiroaki; Amano, Saneomi; Suda, Yasumasa

Patent Assignee/Corporate Source

Toyo Ink Mfg. Co., Ltd., Japan

Source

Jpn. Kokai Tokkyo Koho, 68 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005068367	A	20050317	JP 2003-303402	20030827

Patent Number (1)  
JP 2005068367  
Kind Code (1)  
A  
Patent Publication Date (1)  
20050317  
Application Number (1)  
JP 2003-303402  
Application Date (1)  
20030827  
Priority Patent Number (1)  
JP 2003-303402  
Priority Patent Publication Date (1)  
20030827

Abstract

The materials contain Ar1NR1R2 [Ar1 = (un)substituted perylenyl; R1, R2 = aromatic hydrocarbyl, aromatic heterocyclyl] and azafluoranthenes I (X = N, CR3; R3 = H, aliphatic hydrocarbyl, NAr2Ar3, etc.;  $\geq 1$  of R3-R11 = NAr2Ar3). Thus, an organic electroluminescent device having an emitter layer containing di[4-(1,1-dimethylphenylmethyl)phenyl]-3-perylenylamine, and 1:1 mixture of II (Y = NPh2; Z = H) and I (Y = H, Z = NPh2) showed high luminescence intensity at low operation voltage.

L7 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Electroluminescent materials containing perylenylamines and dibenzodiindenoperylenes, and red-emitting organic electroluminescent devices using them

Author/Inventor

Amano, Saneomi; Suda, Yasumasa; Toba, Yasumasa; Tanaka, Hiroaki

Patent Assignee/Corporate Source

Toyo Ink Mfg. Co., Ltd., Japan

Source

Jpn. Kokai Tokkyo Koho, 70 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005068366	A	20050317	JP 2003-303388	20030827

Patent Number (1)  
JP 2005068366

Kind Code (1)  
A

Patent Publication Date (1)  
20050317

Application Number (1)  
JP 2003-303388

Application Date (1)  
20030827

Priority Patent Number (1)  
JP 2003-303388

Priority Patent Publication Date (1)  
20030827

Abstract

The materials contain Ar1NR1R2 [Ar1 = (un)substituted perylenyl; R1, R2 = aromatic hydrocarbyl, aromatic heterocyclyl] and dibenzo(f,f')diindeno[1,2,3-cd:1',2',3'-lm]perylene I (X1-X20 = H, halo, alkyl, etc.). Thus, an organic electroluminescent device having an emitter layer containing di(4-phenylphenyl)-3-perylenylamine and I (X1 = X6 = X7 = X12 = Ph; other = H) showed high luminescence intensity at low operation voltage and lengthened service life.

L7 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Materials for red-emitting organic electroluminescent devices with long lifetime

Author/Inventor

Toba, Yasumasa; Suda, Yasumasa; Amano, Saneomi; Tanaka, Hiroaki

Patent Assignee/Corporate Source

Toyo Ink Mfg. Co., Ltd., Japan

Source

Jpn. Kokai Tokkyo Koho, 61 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

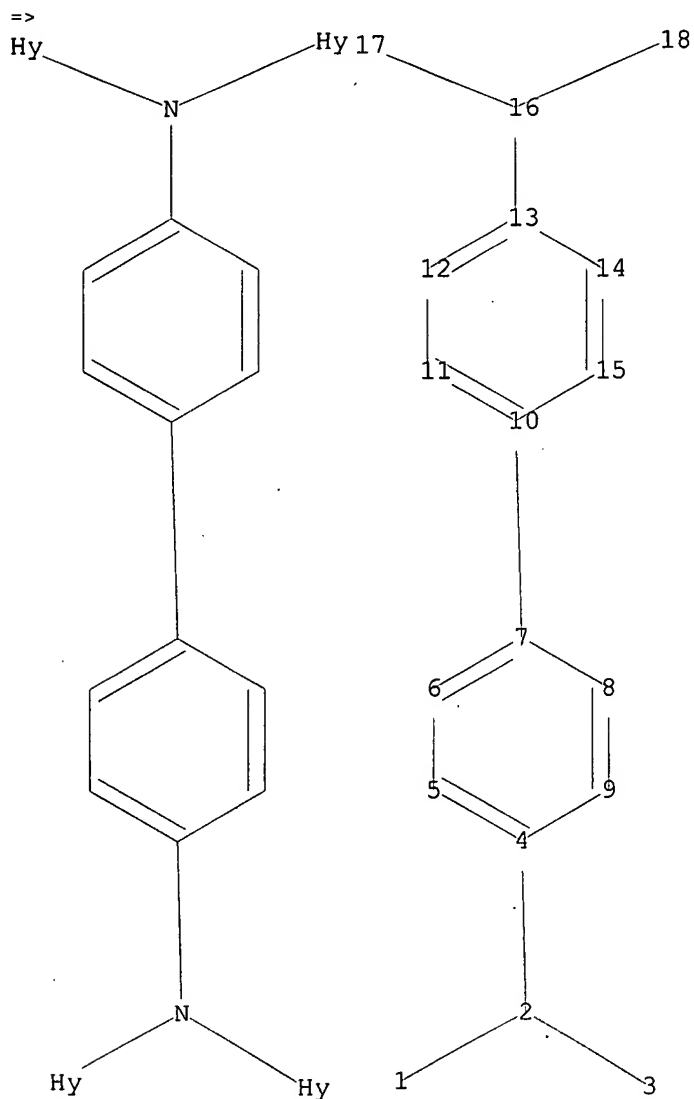
Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005060459	A	20050310	JP 2003-289700	20030808

Patent Number (1)  
 JP 2005060459  
 Kind Code (1)  
 A  
 Patent Publication Date (1)  
 20050310  
 Application Number (1)  
 JP 2003-289700  
 Application Date (1)  
 20030808  
 Priority Patent Number (1)  
 JP 2003-289700  
 Priority Patent Publication Date (1)  
 20030808

# Abstract

The materials comprise (A) amines Ar1NR1R2 [Ar1 = (un)substituted perylenyl; R1, R2 = (un)substituted aromatic hydrocarbyl or aromatic heterocyclic group; Ar1 and R1, Ar1 and R2, or R1 and R2 may form ring] and (B) pyrromethenes I or II [X1-X14 = H, (un)substituted aliphatic hydrocarbyl, aromatic hydrocarbyl, aliphatic heterocyclic group, or aromatic heterocyclic group; X1-X7 may form ring; Y1, Y2 = C, N; X15, X16 = halo, H, (un)substituted aliphatic hydrocarbyl, aromatic hydrocarbyl, aliphatic heterocyclic group, or aromatic heterocyclic group]. Organic electroluminescent devices have light -emitting layers of the materials. The devices show high luminance , low driving voltage, and high color purity.



chain nodes :



1 2 3 16 17 18

ring nodes :

4 5 6 7 8 9 10 11 12 13 14 15

chain bonds :

1-2 2-3 2-4 7-10 13-16 16-17 16-18

ring bonds :

4-5 4-9 5-6 6-7 7-8 8-9 10-11 10-15 11-12 12-13 13-14 14-15

exact/norm bonds :

1-2 2-3 2-4 13-16 16-17 16-18

exact bonds :

7-10

normalized bonds :

4-5 4-9 5-6 6-7 7-8 8-9 10-11 10-15 11-12 12-13 13-14 14-15

Match level :

1:Atom 2:CLASS 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom  
15:Atom 16:CLASS 17:Atom 18:Atom

L8 STRUCTURE UPLOADED

=> s l8 sss full

FULL SEARCH INITIATED 16:48:29 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 103653 TO ITERATE

100.0% PROCESSED 103653 ITERATIONS  
SEARCH TIME: 00.00.02

27 ANSWERS

L9 27 SEA SSS FUL L8

=> s l9

L10 15 L9

=> d his

(FILE 'HOME' ENTERED AT 16:32:38 ON 01 OCT 2007)

FILE 'REGISTRY' ENTERED AT 16:32:49 ON 01 OCT 2007

L1 STRUCTURE UPLOADED

L2 23 S L1 SSS FULL

FILE 'CAPLUS' ENTERED AT 16:33:20 ON 01 OCT 2007

L3 20 S L2

L4 431513 S LUM!N? OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO

L5 12 S L3 AND L4

L6 3 S L5 AND PY<=2004

L7 9 S L5 NOT L6

FILE 'REGISTRY' ENTERED AT 16:47:53 ON 01 OCT 2007

L8 STRUCTURE UPLOADED

L9 27 S L8 SSS FULL

FILE 'CAPLUS' ENTERED AT 16:48:36 ON 01 OCT 2007

L10 15 S L9

=> s l10 and l4

L11 8 L10 AND L4

=> s l11 and py<=2004  
25056907 PY<=2004  
L12 6 L11 AND PY<=2004

=> d l12 1-6 ibib abs

L12 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Binuclear and Starburst Organoplatinum(II) Complexes of 2,2'-Dipyridylamino Derivative Ligands: Structures, Fluxionality, and Luminescence

Author/Inventor

Liu, Qin-De; Jia, Wen-Li; Wu, Gang; Wang, Suning

Patent Assignee/Corporate Source

Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.

Source

Organometallics (2003), 22(18), 3781-3791 CODEN: ORGND7; ISSN: 0276-7333

Document Type

Journal

Language

English

Abstract

New binuclear and starburst trinuclear organoplatinum complexes based on 2,2'-dipyridylamino (dpa) derivative ligands, Pt2Ph4(bab), bab = 1,4-bis(2,2'-dipyridylamino)benzene, 1, Pt2Ph4(babp), babp = 4,4'-bis(2,2'-dipyridylamino)biphenyl, 2, Pt3Ph6(tab), tab = 1,3,5-tris(2,2'-dipyridylamino)benzene, 3, Pt3Ph6(tat), tat = 2,4,6-tris(2,2'-dipyridylamino)-1,3,5-triazine, 4, Pt3Ph6(tabp), tabp = 1,3,5-tris[p-(2,2'-dipyridylamino)phenyl]benzene, 5, Pt3Ph6(tapt), tapt = 2,4,6-tris[p-(2,2'-dipyridylamino)phenyl]-1,3,5-triazine, 6, Pt3Ph6(tabpb), tabpb = 1,3,5-tris{4'-[4''-(2,2'-dipyridylamino)]biphenyl}benzene, 7, and Pt3Ph6(tabpt), tabpt = 1,3,5-tris{4'-[4''-(2,2'-dipyridylamino)]biphenyl}benzene, 8, were synthesized by the reaction of [PtPh2(SMe2)]n with the corresponding chelate ligand. The structures of complexes 1-5 and 8 were determined by single-crystal x-ray diffraction. All eight complexes have phosphorescent emissions in the blue/green region at 77 K, attributed to ligand-centered  $\pi \rightarrow \pi^*$  transitions. Ligand-based fluorescent emission was also detected for complexes 5, 6, and 8. Complexes 1-8 display versatile structures in the solid state. Complex 4 was fluxional in solution. The key factors that influence the structures of the complexes in solution and the solid state are the degree of conjugation of the amino nitrogen lone pair electrons of the dpa unit with the central aromatic linker and intramol. nonbonding interactions.

L12 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

Title

Bisphenyldiamine derivatives and organic electroluminescent devices using them

Author/Inventor

Okubo, Yasushi; Oshiyama, Tomohiro; Kita, Hiroshi

Patent Assignee/Corporate Source

Konica Co., Japan

Source

Jpn. Kokai Tokkyo Koho, 38 pp. CODEN: JKXXAF

Document Type

Patent

Language

Japanese

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003040844	A	20030213	JP 2001-229392	20010730

Patent Number (1)

JP 2003040844

Kind Code (1)

A

Patent Publication Date (1)

20030213

Application Number (1)

JP 2001-229392

Application Date (1)

20010730

Priority Patent Number (1)

JP 2001-229392

Priority Patent Publication Date (1)

20010730

Abstract

The invention relates to an organic electroluminescent device comprising a pair of electrodes sandwiching  $\geq 1$  layer(s) containing  $\geq 1$  compds. I [ $\geq 1$  of T1-4 is substituents; R1-14 = H or substituent; Ar1-2 = (un)substituted aromatic ring;  $\geq 1$  of Ar1-2 is 1-naphthyl, 2-naphthyl, 1-anthryl, 9-anthryl, 1-pyrenyl, 2-pyrenyl or aromatic heterocyclyl].

## L12 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

## Title

Tertiary diamines containing heterocyclic groups and their use in organic electroluminescent devices

## Author/Inventor

Ly, Tuan Quoc

## Patent Assignee/Corporate Source

CDT Oxford Limited, UK

## Source

PCT Int. Appl., 36 pp. CODEN: PIXXD2

## Document Type

Patent

## Language

English

## Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003008515	A1	20030130	WO 2002-GB3115	20020704

## Patent Number (1)

WO 2003008515

## Kind Code (1)

A1

## Patent Publication Date (1)

20030130

## Application Number (1)

WO 2002-GB3115

## Application Date (1)

20020704

## Priority Patent Number (1)

GB 2001-17377

## Priority Kind Code (1)

A

## Priority Patent Publication Date (1)

20010717

## Abstract

Tertiary diamines are claimed which are described by the general formula  $R_1(R_2)N-Ar-N(R_3)R_4$  ( $Ar$  = an aromatic group selected from a chain of 1-3 1,4-Ph, 1,4-naphthyl, or 1,5-naphthyl groups;  $R_1$  = alkyl, alkenyl, cycloalkyl, cycloalkenyl, carbocyclic aryl optionally substituted by  $\geq 1$  group selected from halo, alkyl, cyano, nitro and cycloalkyl and an aromatic heterocyclic group optionally substituted by  $\geq 1$  group selected from halo, cyano, nitro, alkyl, cycloalkyl and aryl optionally substituted by  $\geq 1$  halo group;  $R_2$  = a fused bicyclic or tricyclic aromatic heterocyclic group;  $R_3$  = alkyl, alkenyl, cycloalkyl, cycloalkenyl, carbocyclic aryl optionally substituted by  $\geq 1$  group selected from halo, alkyl, cyano, nitro and cycloalkyl, and an aromatic heterocyclic group optionally substituted by  $\geq 1$  group selected from halo, cyano, nitro, alkyl, cycloalkyl and aryl optionally substituted by  $\geq 1$  halo; and  $R_4$  = carbocyclic aryl optionally substituted by  $\geq 1$  group selected from halo, cyano, nitro and alkyl, and aromatic heterocyclic optionally substituted by  $\geq 1$  halo, cyano, nitro, alkyl, aryl optionally substituted by  $\geq 1$  halo, and cycloalkyl). Methods for producing compds. which are described by the general formula  $R_1(R_2)N-Ar-N(R_2)R_1$  are also described which entail reacting  $Br-Ar-Br$  with  $R_1-NH_2$  to give  $R_1(H)N-Ar-N(R_1)H$  and then reacting the intermediate with  $R_2-X$  ( $X$  = halogen). Use of the compds. as hole injection materials or hole transporting materials in light-emitting devices and electroluminescent devices using the compds. are also described.

## L12 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

## Title

Syntheses, Structures, and Luminescence of Novel Lanthanide Complexes of Tripyridylamine, N,N,N',N'-Tetra(2-pyridyl)-1,4-phenylenediamine and N,N,N',N'-Tetra(2-pyridyl)biphenyl-4,4'-diamine

## Author/Inventor

Yang, Wen-Yu; Chen, Lie; Wang, Suning

## Patent Assignee/Corporate Source

Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.

## Source

Inorganic Chemistry (2001), 40(3), 507-515 CODEN: INOCAJ; ISSN: 0020-1669

## Document Type

Journal

## Language

English

## Abstract

Two novel blue luminescent bridging ligands N,N,N',N'-tetra(2-pyridyl)-1,4-phenylenediamine (tpdp) and N,N,N',N'-tetra(2-pyridyl)-1,1'-biphenyl-4,4'-diamine (tpbpd) were synthesized. Several novel lanthanide complexes containing 2,2',2''-tripyridylamine (2,2',2''-tpa), 2,2',3''-tpa, tpdp, or tpbpd ligands were synthesized and characterized structurally, which include  $Pr(hfa)_3(2,2',2''-tpa)$  (1, hfa = hexafluoroacetylacetonate),  $Ln(tmhd)_3(2,2',3''-tpa)$  ( $Ln = Dy, 2a; Eu, 2b; Tb, 2c; Sm, 2d$ ; tmhd = 2,2,6,6-tetramethyl-3,5-heptanedionate),  $[Eu(tmhd)_3][Pr(hfa)_3](2,2',3''-tpa)$  (3),  $[Pr(hfa)_3]_2(tpdp)$  (4), and  $[Ln(hfa)_3]_2(tpbpd)$  ( $Ln = Pr, 5a; Eu, 5b$ ). The  $Dy(III)$ ,  $Eu(III)$ , and  $Tb(III)$  complexes display a bright photoluminescence, which can be achieved by either a direct excitation process or an indirect excitation process. Compds. 2a-2d can be sublimed readily.

## L12 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

**Title**

Organic thin-film LED and manufacture thereof

**Author/Inventor**

Nanba, Noryoshi; Nakayama, Masatoshi; Nakatani, Kenji

**Patent Assignee/Corporate Source**

Tdk Electronics Co Ltd, Japan

**Source**

Jpn. Kokai Tokkyo Koho, 11 pp. CODEN: JKXXAF

**Document Type**

Patent

**Language**

Japanese

**Patent Information**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08333568	A	19961217	JP 1995-166954	19950608

**Patent Number (1)**

JP 08333568

**Kind Code (1)**

A

**Patent Publication Date (1)**

19961217

**Application Number (1)**

JP 1995-166954

**Application Date (1)**

19950608

**Priority Patent Number (1)**

JP 1995-166954

**Priority Patent Publication Date (1)**

19950608

**Abstract**

A long-life LED comprises a hole-injection or a hole-injection/transport layer formed by glow-discharge polymerization of  $\geq 1$  monomer having 1-12 aromatic ring(s) interconnected by hole-transporting N-containing bridge(s).

L12 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

**Title**

Organic electroluminescent device

**Author/Inventor**

Oonishi, Toshihiro; Noguchi, Masanobu; Kuwabara, Masato

**Patent Assignee/Corporate Source**

Sumitomo Chemical Co., Ltd., Japan

**Source**

Jpn. Kokai Tokkyo Koho, 5 pp. CODEN: JKXXAF

**Document Type**

Patent

**Language**

Japanese

**Patent Information**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05320634	A	19931203	JP 1992-132214	19920525

**Patent Number (1)**

JP 05320634

**Kind Code (1)**

A

**Patent Publication Date (1)**

19931203

**Application Number (1)**

JP 1992-132214

**Application Date (1)**

19920525

**Priority Patent Number (1)**

JP 1992-132214

**Priority Patent Publication Date (1)**

19920525

**Abstract**

In the title device, containing a pair of electrodes sandwiched by a luminescent material-containing luminescent layer and a hole-transporting material-containing layer or a luminescent layer containing both materials, the hole-transporting material contains pyridylamino biphenyl derivative I (R1-4 = C1-12 alkyl, alkoxy, C<sub>6</sub> aromatic hydrocarbon, C<sub>4</sub> aromatic heterocyclic; l, m, n, o = 0-4).

---Logging off of STN---

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Exiting the script...